# Information on Over-the-Horizon Radar

## Part XII - Missile Detection at Altitude for a Medium Distance

J. M. HEADRICK AND E. W. WARD

*Radar Techniques Branch*
*Radar Division*

and

D. L. LUCAS

*Bell Aerosystems Company*
*Tucson, Arizona*

formerly with
Institute for Telecommunication Sciences and Aeronomy
Department of Commerce
Environmental Science Services Administration

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This document is classified ███████ because it reveals proposed location of a new facility, the location of targets of interest and characteristics of an R and D equipment.

## ABSTRACT
(██████)

This report gives expected OTH radar performance for a site near Diyarbakir viewing the region around Lake Balkash.

## PROBLEM STATUS

This is an interim report on a phase of the problem; work is continuing.

## AUTHORIZATION

USAF MIPR (30-602) 64-3412 to the
Naval Research Laboratory
dated 26 March 1964
NRL Problem 53R02-42

# MISSILE DETECTION AT ALTITUDE FOR A MEDIUM DISTANCE
## (Unclassified Title)

## INTRODUCTION

It has been suggested that a limited capability hf radar might be accommodated on the existing Turkish site near Diyarbakir and that this radar could furnish useful coverage for missiles in the Lake Balkash region (1, 2 and 3). The radar location is taken as $38^\circ$N $40^\circ$E and the target as $46^\circ$N $73^\circ$E giving a great circle ground range of 1494 naut mi and forward and reverse bearings of $061^\circ$ and $262^\circ$ true. ITSA long range ionospheric data have been used with the prediction methods of ESSA Technical Report, IER 1 - ITSA 2 and the radar application of such methods as is described in an NRL report (5). The operating period of 1968-1970 with an estimated average sunspot number (SSN) of 110 is examined for three months, June, September and December, being representative of summer, spring/fall and winter respectively. A frequency complement composed of narrow band channels at nominally 9, 10, 11, 12, 13, 14, 16, 18, 20, 22, 24, 27, 30 Mc has been assumed available. Target altitudes considered are 0, 50, 100 and 150 km. The signal absorbing layer has been considered slightly below 100 km. Since the radar installed on the existing site probably will not permit a full ground screen, a launch angle minimum of $4^\circ$ has been set. This controlling noise was taken as that given in CCIR Report #322 except that noise power was not allowed to drop below a threshold set by a median level, $Nm = 148 + 12.6 \ln(fmc/3)$db, below a watt; this noise is an estimate for the narrow band (5-10 kc) frequency complement assumed.

## RESULTS

The results are given in the form of diurnal graphs of % Time, S/N, $\Psi$ and f.

> % Time is a measure of radar effective operating time and also it is referred to as Total Reliability. In effect it is a combined reliability computed from individual reliabilities based upon the fading signal, fluctuating noise and probability of ionospheric support for the better frequencies in the complement. Implicit assumptions are that the radar is frequency and launch angle flexible, that existing propagation conditions are known and that the radar is properly operated.

> S/N is the ratio in db of output signal-to-noise at the monthly median MUF.

> $\Psi$ is the vertical launch angle in degrees for the monthly median MUF path

> f is the median MUF for the month given in megacycles per second. Time is given in hours GMT.

The modes considered are as sketched in Fig. 1, and on the diurnal graphs the mode for the median MUF is indicated. All percent time curves have been computed with the requirement that the output signal-to-noise be 10 db or better. The product (radiated power over a watt) (antenna gain over a free space isotrope)$^2$ (signal processing time over a second) (target radar area over a square meter) or $PG^2T\sigma$, has been taken as 143, 133, 123 and 113 db. As an example the $PG^2T\sigma = 143$ may be broken down as follows:

| | |
|---|---|
| P = 400 kw average or | 56 db |
| $G^2 =$ | 60 db |
| T = 10 sec. or | 10 db |
| $\sigma$ = 50 sq. meters or | <u>17 db</u> |
| | 143 db |

An example of $PG^2T\sigma = 133$

| | |
|---|---|
| P = 400 kw average or | 56 db |
| $G^2 =$ | 50 db |
| T = 10 sec. or | 10 db |
| $\sigma$ = 50 sq. meters or | <u>17 db</u> |
| | 133 db |

An example of $PG^2T\sigma = 123$

| | |
|---|---|
| P = 200 kw average or | 53 db |
| $G^2 =$ | 50 db |
| T = 2 sec. or | 3 db |
| $\sigma$ = 50 sq. meters or | <u>17 db</u> |
| | 123 db |

Figures 2 through 13 are diurnal graphs of Total Reliability or Percent Time of effective operation (% Time), output median signal to median noise ratio (S/N) for the median MUF, launch angle ($\psi$) in degrees for the median MUF, and frequency (f) in megacycles per second for the median MUF. The median MUF mode is indicated between the % Time and S/N plots. These curves show a marked decrease in radar capability near midday local time (0900 GMT) for the summer months and equinoxes.

The effective operating times are summarized in Fig. 14 by daily average. The $PG^2T\sigma = 143$ table shows daily effective times of near 95%. With minor exceptions Fig. 14 shows more effective operating time for targets of 100 km and lower altitudes.

Figures 15, 16 and 17 give composite plots of S/N, the median MUF and its launch angle. For the years considered, an overall frequency span of 10 through 33 megacycles is required. Launch angles up to 11° are useful with indications that launch angles of less than 4° would also be useful if permitted. The modes, 1F 1F-, and 1F+ provide the coverage.

## CONCLUSIONS

The problem under study is of missile skin tracking at about 1500 naut mi employing an AN/FPS-95 capability radar (6) but with frequency, azimuth sector and launch angle abbreviations. Some of the results are:

(a) The $PG^2T\sigma$ = 133 db case corresponds to 400 kw average power (two AN/FPS-95 transmitters) and an assumed 10 seconds effective processing time against a 50 $m^2$ target. Effective operating time indicated is high at all altitides, averaging over 80%.

(b) The $PG^2T\sigma$ = 123 db case illustrates expected performance for a single AN/FPS-95 transmitter (200 kw) with 2 seconds of processing gain against a 50 $m^2$ target. Effective operating time averages over 50%.

(c) The exhibits for $PG^2T\sigma$ = 143 and 113 db are given to show how even higher and lower performance radars can be expected to operate.

Examination of Figs. 15, 16, 17 shows that a single vertical beam covering 4° to 12° provides for all average vertical launch angles. These figures also show that provisions for radiation below 4° can significantly improve performance, principally at the 100 km target altitude but to some extent at the 150 km altitude.

A single beam AN/FPS-95 with a considerably abbreviated antenna can provide useful coverage.

## PREDICTION EXPLANATION AND SET OF TABLES

The problem brief will be stated. The predictions were computer for June, September and December, sunspot number 110 using the following parameters:

a. Height of target - (0, 50, 100 and 150 km)

b. Gain of antenna - (25 db)

c. Target radar area - (SIGMA) (1000 sq. meters). This area was a computational convenience to go with the noise tabulation which' was in power in a 1-cps band. The specified parameter in fact is is the (radar area) (integration time) product which would be 1000 $m^2$ sec.

d. 3 Mc/s manmade noise - (-148 dbw)

3

e. Required signal-to-noise ratio - (0, 10, 20 and 30 db)

f. Power - (200 kw)

g. Minimum acceptable angle of takeoff and arrival - (4 degrees)

A description of the body of the printout follows:

1. MUF: Monthly median maximum usable frequency

2. MODE: The mode contributing most to the overall probability that at least one sky-wave path exists

3. ANGLE: The average takeoff and arrival angle associated with the above mode

4. C. PROB.: The overall probability that at least one mode is present to produce the quasi-minimum loss for the circuit

5. NOISE: The predominant noise (atmospheric, manmade or cosmic) (db < 1 watt in a 1-cps bandwidth)

6. F.S. LOSS: The free space loss between isotropic radiators (two-way)

7. P. LOSS: The propagation losses two way (ionospheric quasi-minimum and ground losses)

8. S/N - DB: The received signal power in the occupied bandwidth relative to noise in a 1-cps bandwidth

9. S/N PROB. A, B, C, and D: The probability that the available signal-to noise exceeds the required signal-to-noise, considering only the fluctuations of the signal and noise (ionospheric probability of support not included)

$$A, \ PG^2T\sigma = 143 \ db$$
$$B, \ PG^2T\sigma = 133 \ db$$
$$C, \ PG^2T\sigma = 123 \ db$$
$$D, \ PG^2T\sigma = 113 \ db$$

10. T. REL.: The total combined reliability of the frequency complement ($PG^2T\sigma$ = 143, 133, 123 and 113 db)

Computation results are shown in the following tables for $PG^2T\sigma$ = 143, 133, 123 and 113 db.

An approximate manual solution for one hour will be given. The relation used is $(S/N) = \dfrac{PG^2 T \sigma \lambda^2}{NL(4\pi)3R^4}$

The computations were for $\sigma = 1000$ and $T = 1$, however, any $\sigma T = 1000$ is valid, and the examples in the body of the report were taken as $\sigma = 50$ m$^2$ and $T = 20$ sec. since 50 m$^2$ is an appropriate estimate of missile skin radar area and 20 sec. is approximately the maximum signal processing time that can be effective. Since the free space spreading loss as given in the table is

$$\text{F.S. LOSS} = \left(\frac{4\pi R}{\lambda}\right)^4$$

that is, the two-way spreading loss between two isotropes, the radar equation will be rearranged:

$$(S/N) = \frac{PG^2 T \sigma}{NL} \times \left(\frac{\lambda}{4\pi R}\right)^4 \times \frac{4\pi}{\lambda^2}$$

or using db

$(S/N)_{db} = 10 \log P + 20 \log G + 10 \log \sigma T - 10 \log N - 10 \log L - \text{F.S. LOSS} - 10 \log \dfrac{\lambda^2}{4\pi}$

The specified parameters set

$$10 \log P = 53$$
$$20 \log G = 50$$
$$10 \log \sigma T = 30$$

consider the case for June, 18 hours and 150 km altitude at the MUF.

$$-10 \log N = 169 \text{ from the table}$$

As a matter of interest this happened to be the median noise level set by specifying a rural noise threshold

$$10 \log L = 9 + 9$$

One factor is taken from the table and is the quasi-minimum loss plus ground reflection loss where appropriate. The other is the excess system loss which though not printed out in the table was used in the computations. The excess system loss is the factor that randomly varies giving the fluctuating signal description. Its median value for the problem here under study remained approximately 9 db at all times.

$$\text{F.S. LOSS} = 253 \text{ from the table}$$

$$10 \log \frac{\lambda^2}{4\pi} \approx 13 \text{ at } 17.9 \text{ Mc/s}$$

So $53 + 50 + 30 + 169 - 9 - 9 - 253 - 13 = 18$ db

This compares with the 17 printed out in the table.

An example of determining Total Reliability (T. REL) or % Time of effectiveness will be given for the same time block for which the above output signal-to-noise ratio was computed. By inspection the highest best frequency of the complement is 14 Mc/s, and the reliability at that frequency can be computed

$$R_1 = (\text{C. PROB}) (\text{S/N PROB})$$

or using the $\qquad PG^2T\sigma = 123$

$$R_1 = (0.96( (0.42) = 0.40$$

Another reliability is computed selecting the best case from frequencies more than 15% above that of $R_1$. This turns out to be at 18 Mc/s.

$$R_2 = (0.48)(0.42) = 0.20$$

Similarly a reliability is computed for the best case among frequencies at least 15% below that of $R_1$. This is for 11 Mc/s and gives

$$R_3 = (0.99)(0.32) = 0.32$$

It has been assumed that these reliabilities from frequencies at least 15% apart are independent thus T. REL. $= R_1 + R_2 + R_3 - R_1R_2 - R_1R_3 - R_2R_3 + R_1R_2R_3$
$= 0.40 + 0.20 + 0.32 - 0.08 - 0.13 - 0.06 + 0.03 = 0.95 - .27 = 0.68$ or 68%.
This is what the computer printed out.

# REFERENCES

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6. F.E. Boyd, F.M. Gager, J.M. Headrick, G.K. Jensen, E. Lurker, LCDR, USN, G.A. Morgan, E.N. Zettle, <u>Information on Over-the-Horizon Radar, Part II</u> (U), NRL Memo Report June 1, 1965 ■■■■

Fig. 1 – The transmission modes considered for targets at altitudes greater than zero are sketched for F-layer reflection

Fig. 2 - Percent of time of effective operation for four values of PG$^2$T$\sigma$, the median MUF (f) for the designated month in Mc/s, the signal-to-noise ratio (S/N) at the median MUF in db for PG$^2$T$\sigma$ = 133, the vertical launch angle ($\psi$) in degrees for the median MUF path, and the transmission mode for the median MUF path are given versus GMT hours

Fig. 3 - Percent of time of effective operation for four
values of $PG^2T\sigma$, the median MUF (f) for the designated
month in Mc/s, the signal-to-noise ratio (S/N) at the
median MUF in db for $PG^2T\sigma = 133$, the vertical launch
angle ($\psi$) in degrees for the median MUF path, and the
transmission mode for the median MUF path are given
versus GMT hours

Fig. 4 - Percent of time of effective operation for four values of $PG^2 T\sigma$, the median MUF (f) for the designated month in Mc/s, the signal-to-noise ratio (S/N) at the median MUF in db for $PG^2 T\sigma = 133$, the vertical launch angle ($\psi$) in degrees for the median MUF path, and the transmission mode for the median MUF path are given versus GMT hours

Fig. 5 - Percent of time of effective operation for four values of $PG^2 T\sigma$, the median MUF (f) for the designated month in Mc/s, the signal-to-noise ratio (S/N) at the median MUF in db for $PG^2 T\sigma$ = 133, the vertical launch angle ($\psi$) in degrees for the median MUF path, and the transmission mode for the median MUF path are given versus GMT hours

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Fig. 6 - Percent of time of effective operation for four values of $PG^2T\sigma$, the median MUF (f) for the designated month in Mc/s, the signal-to-noise ratio (S/N) at the median MUF in db for $PG^2T\sigma$ = 133, the vertical launch angle ($\psi$) in degrees for the median MUF path, and the transmission mode for the median MUF path are given versus GMT hours

13

Fig. 7 - Percent of time of effective operation for four values of $PG^2T\sigma$, the median MUF (f) for the designated month in Mc/s, the signal-to-noise ratio (S/N) at the median MUF in db for $PG^2T\sigma = 133$, the vertical launch angle ($\psi$) in degrees for the median MUF path, and the transmission mode for the median MUF path are given versus GMT hours

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Fig. 8 - Percent of time of effective operation for four values of $PG^2T\sigma$, the median MUF (f) for the designated month in Mc/s, the signal-to-noise ratio (S/N) at the median MUF in db for $PG^2T\sigma = 133$, the vertical launch angle ($\psi$) in degrees for the median MUF path, and the transmission mode for the median MUF path are given versus GMT hours

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Fig. 9 - Percent of time of effective operation for four values of $PG^2T\sigma$, the median MUF (f) for the designated month in Mc/s, the signal-to-noise ratio (S/N) at the median MUF in db for $PG^2T\sigma = 133$, the vertical launch angle ($\psi$) in degrees for the median MUF path, and the transmission mode for the median MUF path are given versus GMT hours

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Fig. 10 - Percent of time of effective operation for four
values of $PG^2T\sigma$, the median MUF (f) for the designated
month in Mc/s, the signal-to-noise ratio (S/N) at the
median MUF in db for $PG^2T\sigma$ = 133, the vertical launch
angle ($\psi$) in degrees for the median MUF path, and the
transmission mode for the median MUF path are given
versus GMT hours

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Fig. 11 - Percent of time of effective operation for four values of $PG^2 T\sigma$, the median MUF (f) for the designated month in Mc/s, the signal-to-noise ratio (S/N) at the median MUF in db for $PG^2 T\sigma$ = 133, the vertical launch angle ($\psi$) in degrees for the median MUF path, and the transmission mode for the median MUF path are given versus GMT hours

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Fig. 12 - Percent of time of effective operation for four values of $PG^2T\sigma$, the median MUF (f) for the designated month in Mc/s, the signal-to-noise ratio (S/N) at the median MUF in db for $PG^2 T\sigma$ = 133, the vertical launch angle ($\psi$) in degrees for the median MUF path, and the transmission mode for the median MUF path are given versus GMT hours

Fig. 13 – Percent of time of effective operation for four values of $PG^2T\sigma$, the median MUF (f) for the designated month in Mc/s, the signal-to-noise ratio (S/N) at the median MUF in db for $PG^2T\sigma$ = 133, the vertical launch angle ($\psi$) in degrees for the median MUF path, and the transmission mode for the median MUF path are given versus GMT hours

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## PERCENT TIME

### $PG^2T\sigma = 143$

| TARGET ALT. | JUNE | SEPT. | DEC. | YEAR |
|---|---|---|---|---|
| 0 KM | 94 | 96 | 94 | 95 |
| 50 KM | 94 | 98 | 97 | 96 |
| 100 KM | 89 | 98 | 96 | 94 |
| 150 KM | 86 | 98 | 90 | 91 |

### $PG^2T\sigma = 133$

| 0 KM | 85 | 90 | 83 | 86 |
|---|---|---|---|---|
| 50 KM | 84 | 93 | 94 | 90 |
| 100 KM | 75 | 90 | 94 | 86 |
| 150 KM | 66 | 86 | 84 | 79 |

### $PG^2T\sigma = 123$

| 0 KM | 61 | 68 | 56 | 62 |
|---|---|---|---|---|
| 50 KM | 58 | 68 | 62 | 63 |
| 100 KM | 51 | 62 | 68 | 60 |
| 150 KM | 35 | 52 | 56 | 47 |

### $PG^2T\sigma = 113$

| 0 KM | 27 | 30 | 21 | 26 |
|---|---|---|---|---|
| 50 KM | 26 | 29 | 23 | 26 |
| 100 KM | 22 | 25 | 26 | 24 |
| 150 KM | 11 | 18 | 19 | 16 |

Fig. 14 – Effective operating time is given
by daily average

Fig. 15 - The median MUF, its launch angle and S/N
versus GMT are shown for the month indicated as
combined plots for the altitudes considered

Fig. 16 – The median MUF, its launch angle and S/N versus GMT are shown for the month indicated as combined plots for the altitudes considered

Fig. 17 - The median MUF, its launch angle and S/N versus GMT are shown for the month indicated as combined plots for the altitudes considered

```
        1          JUN        RECEIVER      SSN=  110              26.015
    TRANSMITTER                             AZIMUTHS         N.MILES
       SITE C                 RCVR 0       61.0 262.8          1493.7
   SIGMA= 1000 SQ. METERS                                    ANT= 25DB
    OFF AZIMUTH   0 DEG.    MIN. ANGLE=  4 DEG.    OFF AZIMUTH   0 DEG.
  PWR=200.00KW   3 MC/S MAN.NOISE= -148 DBW    REQ.S/N=  0, 10, 20, 30DB
                       OPERATING FREQUENCIES
```

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 19.6 | | | | | | | | | | | | | | |
| | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | - | - | - | MODE |
| | 76 | 62 | 52 | 49 | 48 | 49 | 50 | 55 | 63 | 75 | 75 | - | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 98 | 96 | 94 | 84 | 67 | 42 | 13 | - | - | - | C.PROB. |
| | 98 | 97 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 98 | 98 | - | - | - | DELAY |
| | 170 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | - | - | - | NOISE |
| | 255 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | - | - | - | FS.LOSS |
| | 5 | 23 | 20 | 17 | 14 | 13 | 11 | 8 | 6 | 5 | 4 | - | - | - | P. LOSS |
| | 21 | 2 | 5 | 8 | 11 | 13 | 15 | 18 | 20 | 22 | 23 | - | - | - | S/N..DB |
| | 99 | 63 | 79 | 90 | 96 | 97 | 98 | 99 | 99 | 99 | 99 | - | - | - | S/N..PROB.A |
| | 95 | 23 | 33 | 45 | 60 | 71 | 80 | 89 | 94 | 96 | 97 | - | - | - | S/N..PROB.B |
| | 60 | 4 | 8 | 13 | 21 | 27 | 34 | 43 | 54 | 62 | 68 | - | - | - | S/N..PROB.C |
| | 21 | 0 | 0 | 2 | 3 | 5 | 8 | 13 | 18 | 22 | 25 | - | - | - | S/N..PROB.D |
| 4 | 22.4 | | | | | | | | | | | | | | |
| | 1 F | 2 F | 2 F | 2 F | 2 F | 2 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | MODE |
| | 68 | 179 | 173 | 172 | 175 | 182 | 60 | 49 | 50 | 55 | 65 | 65 | 65 | 65 | ANGLE |
| | 50 | 98 | 95 | 90 | 83 | 72 | 97 | 93 | 84 | 71 | 53 | 38 | 19 | 7 | C.PROB. |
| | 97 | 101 | 101 | 101 | 101 | 101 | 97 | 96 | 96 | 96 | 97 | 97 | 97 | 97 | DELAY |
| | 172 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 257 | 242 | 244 | 245 | 247 | 248 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | 262 | FS.LOSS |
| | 9 | 66 | 58 | 51 | 45 | 40 | 22 | 18 | 14 | 12 | 9 | 8 | 6 | 5 | P. LOSS |
| | 18 | -42 | -33 | -26 | -20 | -15 | 4 | 9 | 12 | 16 | 18 | 20 | 21 | 24 | S/N..DB |
| | 99 | 0 | 0 | 0 | 2 | 7 | 75 | 91 | 97 | 99 | 99 | 99 | 99 | 99 | S/N..PROB.A |
| | 89 | 0 | 0 | 0 | 0 | 0 | 30 | 47 | 66 | 81 | 88 | 93 | 95 | 98 | S/N..PROB.B |
| | 44 | 0 | 0 | 0 | 0 | 0 | 7 | 15 | 24 | 35 | 43 | 51 | 60 | 72 | S/N..PROB.C |
| | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 8 | 12 | 17 | 21 | 28 | S/N..PROB.D |
| 6 | 23.0 | | | | | | | | | | | | | | |
| | 1 F | - | - | 2 F | 2 F | 2 F | 2 F | 2 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | MODE |
| | 57 | - | - | 169 | 163 | 164 | 169 | 189 | 48 | 45 | 51 | 52 | 52 | 52 | ANGLE |
| | 5 | - | - | 91 | 84 | 74 | 62 | 38 | 87 | 75 | 59 | 43 | 23 | 10 | C.PROB. |
| | 97 | - | - | 100 | 100 | 100 | 100 | 102 | 96 | 96 | 96 | 96 | 96 | 96 | DELAY |
| | 172 | - | - | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 257 | - | - | 245 | 247 | 248 | 249 | 252 | 253 | 255 | 256 | 258 | 260 | 262 | FS.LOSS |
| | 13 | - | - | 69 | 62 | 55 | 49 | 39 | 21 | 17 | 14 | 12 | 10 | 8 | P. LOSS |
| | 14 | - | - | -44 | -37 | -29 | -23 | -13 | 6 | 10 | 13 | 16 | 18 | 21 | S/N..DB |
| | 99 | - | - | 0 | 0 | 0 | 0 | 7 | 84 | 93 | 97 | 99 | 99 | 99 | S/N..PROB.A |
| | 76 | - | - | 0 | 0 | 0 | 0 | 0 | 36 | 50 | 68 | 82 | 90 | 94 | S/N..PROB.B |
| | 29 | - | - | 0 | 0 | 0 | 0 | 0 | 8 | 14 | 23 | 34 | 44 | 55 | S/N..PROB.C |
| | 5 | - | - | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 7 | 11 | 17 | S/N..PROB.D |
| 8 | 22.8 | | | | | | | | | | | | | | |
| | 1 F | - | - | 2 F | 2 F | 2 F | 2 F | 2 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | MODE |
| | 57 | - | - | 179 | 170 | 168 | 172 | 188 | 55 | 49 | 53 | 51 | 51 | 51 | ANGLE |
| | 5 | - | - | 90 | 82 | 72 | 59 | 33 | 86 | 74 | 57 | 40 | 19 | 7 | C.PROB. |
| | 97 | - | - | 101 | 100 | 100 | 101 | 102 | 96 | 96 | 96 | 96 | 96 | 96 | DELAY |
| | 172 | - | - | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 257 | - | - | 245 | 247 | 248 | 249 | 252 | 253 | 255 | 256 | 258 | 260 | 262 | FS.LOSS |
| | 15 | - | - | 76 | 68 | 61 | 54 | 43 | 23 | 20 | 16 | 14 | 11 | 9 | P. LOSS |
| | 13 | - | - | -51 | -43 | -35 | -28 | -17 | 3 | 8 | 12 | 14 | 17 | 20 | S/N..DB |
| | 97 | - | - | 0 | 0 | 0 | 0 | 3 | 71 | 88 | 96 | 98 | 99 | 99 | S/N..PROB.A |
| | 70 | - | - | 0 | 0 | 0 | 0 | 0 | 25 | 41 | 62 | 73 | 87 | 93 | S/N..PROB.B |
| | 25 | - | - | 0 | 0 | 0 | 0 | 0 | 4 | 10 | 20 | 27 | 40 | 50 | S/N..PROB.C |
| | 4 | - | - | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 9 | 14 | S/N..PROB.D |

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|-----|-----|---|----|----|----|----|----|----|----|----|----|----|----|----|---|
| 10 | 22.1 | | | | | | | | | | | | | | |
| | 1 F | - | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 1 F | 1 F | 1 F | 1 F | 1 F | - | MODE |
| | 68 | - | 195 | 185 | 182 | 186 | 196 | 209 | 59 | 59 | 68 | 63 | 63 | - | ANGLE |
| | 50 | - | 94 | 88 | 79 | 68 | 54 | 28 | 83 | 68 | 51 | 34 | 14 | - | C.PROB. |
| | 97 | - | 102 | 102 | 101 | 102 | 102 | 104 | 97 | 97 | 97 | 97 | 97 | - | DELAY |
| | 172 | - | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 257 | - | 244 | 245 | 247 | 248 | 250 | 252 | 253 | 255 | 257 | 258 | 260 | - | FS.LOSS |
| | 14 | - | 79 | 70 | 62 | 55 | 49 | 40 | 21 | 18 | 14 | 12 | 10 | - | P. LOSS |
| | 13 | - | -54 | -46 | -37 | -30 | -23 | -14 | 5 | 10 | 13 | 15 | 18 | - | S/N..DB |
| | 97 | - | 0 | 0 | 0 | 0 | 0 | 6 | 80 | 93 | 97 | 98 | 99 | - | S/N..PROB.A |
| | 68 | - | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 50 | 68 | 78 | 90 | - | S/N..PROB.B |
| | 23 | - | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 14 | 23 | 31 | 44 | - | S/N..PROB.C |
| | 3 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 6 | 11 | - | S/N..PROB.D |
| 12 | 21.2 | | | | | | | | | | | | | | |
| | 1 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 1 F | 1 F | 1 F | 1 F | 1 F | - | - | MODE |
| | 70 | 191 | 182 | 181 | 184 | 193 | 211 | 57 | 56 | 62 | 66 | 66 | - | - | ANGLE |
| | 50 | 98 | 95 | 89 | 79 | 64 | 47 | 93 | 82 | 63 | 40 | 19 | - | - | C.PROB. |
| | 97 | 102 | 101 | 101 | 101 | 102 | 104 | 97 | 96 | 97 | 97 | 97 | - | - | DELAY |
| | 171 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 256 | 242 | 244 | 245 | 247 | 248 | 250 | 251 | 253 | 255 | 257 | 258 | - | - | FS.LOSS |
| | 11 | 73 | 64 | 56 | 50 | 44 | 39 | 20 | 16 | 13 | 11 | 9 | - | - | P. LOSS |
| | 15 | -49 | -40 | -32 | -25 | -19 | -13 | 6 | 10 | 14 | 17 | 19 | - | - | S/N..DB |
| | 99 | 0 | 0 | 0 | 0 | 3 | 10 | 82 | 94 | 98 | 99 | 99 | - | - | S/N..PROB.A |
| | 80 | 0 | 0 | 0 | 0 | 0 | 1 | 36 | 54 | 72 | 85 | 91 | - | - | S/N..PROB.B |
| | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 18 | 28 | 39 | 47 | - | - | S/N..PROB.C |
| | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 6 | 10 | 15 | - | - | S/N..PROB.D |
| 14 | 21.2 | | | | | | | | | | | | | | |
| | 1 F | 2 F | 2 F | 2 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | - | - | MODE |
| | 64 | 163 | 163 | 167 | 49 | 44 | 42 | 43 | 47 | 55 | 62 | 62 | - | - | ANGLE |
| | 50 | 99 | 96 | 91 | 99 | 99 | 98 | 93 | 82 | 64 | 40 | 19 | - | - | C.PROB. |
| | 97 | 100 | 100 | 100 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | - | - | DELAY |
| | 171 | 159 | 160 | 161 | 163 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 256 | 242 | 243 | 245 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 258 | - | - | FS.LOSS |
| | 6 | 49 | 42 | 37 | 19 | 17 | 15 | 12 | 9 | 7 | 6 | 5 | - | - | P. LOSS |
| | 20 | -26 | -19 | -14 | 4 | 8 | 11 | 15 | 17 | 20 | 21 | 23 | - | - | S/N..DB |
| | 99 | 0 | 2 | 7 | 76 | 90 | 95 | 98 | 99 | 99 | 99 | 99 | - | - | S/N..PROB.A |
| | 94 | 0 | 0 | 0 | 28 | 42 | 60 | 78 | 87 | 93 | 95 | 97 | - | - | S/N..PROB.B |
| | 54 | 0 | 0 | 0 | 5 | 10 | 21 | 32 | 41 | 50 | 57 | 68 | - | - | S/N..PROB.C |
| | 18 | 0 | 0 | 0 | 0 | 1 | 3 | 7 | 11 | 16 | 19 | 25 | - | - | S/N..PROB.D |
| 16 | 21.8 | | | | | | | | | | | | | | |
| | 1 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 1 F | 1 F | 1 F | 1 F | 1 F | - | - | MODE |
| | 66 | 156 | 160 | 165 | 172 | 182 | 196 | 40 | 46 | 53 | 65 | 65 | - | - | ANGLE |
| | 50 | 99 | 99 | 98 | 92 | 81 | 62 | 98 | 92 | 74 | 46 | 20 | - | - | C.PROB. |
| | 97 | 99 | 100 | 100 | 101 | 101 | 103 | 96 | 96 | 96 | 97 | 97 | - | - | DELAY |
| | 172 | 158 | 160 | 162 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 256 | 242 | 243 | 245 | 247 | 248 | 250 | 251 | 253 | 255 | 257 | 258 | - | - | FS.LOSS |
| | 2 | 21 | 19 | 18 | 17 | 17 | 16 | 3 | 3 | 2 | 2 | 1 | - | - | P. LOSS |
| | 26 | 0 | 3 | 5 | 7 | 8 | 8 | 23 | 24 | 25 | 26 | 26 | - | - | S/N..DB |
| | 99 | 54 | 73 | 83 | 91 | 90 | 90 | 99 | 99 | 99 | 99 | 99 | - | - | S/N..PROB.A |
| | 99 | 14 | 23 | 30 | 39 | 45 | 45 | 97 | 98 | 98 | 99 | 99 | - | - | S/N..PROB.B |
| | 81 | 1 | 3 | 5 | 8 | 14 | 13 | 69 | 76 | 77 | 82 | 82 | - | - | S/N..PROB.C |
| | 35 | 0 | 0 | 0 | 0 | 2 | 1 | 26 | 30 | 31 | 35 | 36 | - | - | S/N..PROB.D |

OPERATING FREQUENCIES

### GMT 18, MUF 20.2

| Param | | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MODE | 1 F | 2 F | 2 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | – | – |
| ANGLE | 74 | 173 | 178 | 41 | 42 | 44 | 46 | 51 | 58 | 71 | 74 | 74 | – | – |
| C.PROB. | 50 | 99 | 98 | 99 | 99 | 99 | 99 | 95 | 81 | 54 | 24 | 7 | – | – |
| DELAY | 97 | 101 | 101 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | 97 | 97 | – | – |
| NOISE | 171 | 158 | 161 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | – | – |
| FS.LOSS | 255 | 242 | 244 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 258 | – | – |
| P. LOSS | 1 | 18 | 17 | 5 | 4 | 3 | 3 | 2 | 2 | 1 | 1 | 1 | – | – |
| S/N..DB | 26 | 3 | 6 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 26 | 27 | – | – |
| S/N..PROB.A | 99 | 74 | 87 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | – | – |
| S/N..PROB.B | 99 | 25 | 34 | 97 | 96 | 97 | 97 | 98 | 99 | 99 | 99 | 99 | – | – |
| S/N..PROB.C | 82 | 4 | 7 | 54 | 60 | 66 | 70 | 74 | 80 | 81 | 82 | 85 | – | – |
| S/N..PROB.D | 37 | 0 | 0 | 16 | 23 | 26 | 29 | 31 | 35 | 36 | 37 | 40 | – | – |

### GMT 20, MUF 18.9

| Param | | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MODE | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | – | – | – |
| ANGLE | 78 | 43 | 44 | 46 | 48 | 50 | 52 | 59 | 70 | 78 | 78 | – | – | – |
| C.PROB. | 50 | 99 | 99 | 99 | 99 | 98 | 95 | 83 | 61 | 29 | 6 | – | – | – |
| DELAY | 98 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | 98 | 98 | – | – | – |
| NOISE | 170 | 159 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | – | – | – |
| FS.LOSS | 254 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | – | – | – |
| P. LOSS | 1 | 6 | 5 | 4 | 4 | 3 | 3 | 2 | 2 | 1 | 1 | – | – | – |
| S/N..DB | 25 | 16 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 26 | – | – | – |
| S/N..PROB.A | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | – | – | – |
| S/N..PROB.B | 98 | 87 | 95 | 94 | 96 | 97 | 97 | 98 | 99 | 99 | 99 | – | – | – |
| S/N..PROB.C | 78 | 35 | 46 | 54 | 60 | 66 | 70 | 74 | 80 | 81 | 82 | – | – | – |
| S/N..PROB.D | 34 | 8 | 13 | 21 | 23 | 26 | 29 | 31 | 35 | 36 | 37 | – | – | – |

### GMT 22, MUF 17.4

| Param | | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MODE | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | – | – | – | – |
| ANGLE | 84 | 50 | 51 | 53 | 55 | 58 | 61 | 71 | 84 | 84 | – | – | – | – |
| C.PROB. | 50 | 99 | 99 | 99 | 98 | 95 | 89 | 69 | 37 | 8 | – | – | – | – |
| DELAY | 98 | 96 | 96 | 96 | 96 | 97 | 97 | 97 | 98 | 98 | – | – | – | – |
| NOISE | 169 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | – | – | – | – |
| FS.LOSS | 253 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | – | – | – | – |
| P. LOSS | 2 | 6 | 5 | 4 | 4 | 3 | 3 | 2 | 2 | 1 | – | – | – | – |
| S/N..DB | 25 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 24 | 26 | – | – | – | – |
| S/N..PROB.A | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | – | – | – | – |
| S/N..PROB.B | 98 | 91 | 92 | 94 | 96 | 97 | 97 | 98 | 98 | 99 | – | – | – | – |
| S/N..PROB.C | 78 | 42 | 48 | 54 | 60 | 66 | 70 | 74 | 76 | 81 | – | – | – | – |
| S/N..PROB.D | 34 | 11 | 18 | 21 | 23 | 26 | 29 | 31 | 32 | 36 | – | – | – | – |

### GMT 24, MUF 15.9

| Param | | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MODE | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | – | – | – | – | – |
| ANGLE | 86 | 52 | 54 | 56 | 59 | 63 | 68 | 86 | 86 | – | – | – | – | – |
| C.PROB. | 50 | 99 | 98 | 95 | 90 | 83 | 74 | 47 | 11 | – | – | – | – | – |
| DELAY | 98 | 96 | 96 | 96 | 97 | 97 | 97 | 98 | 98 | – | – | – | – | – |
| NOISE | 168 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | – | – | – | – | – |
| FS.LOSS | 251 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | – | – | – | – | – |
| P. LOSS | 2 | 6 | 5 | 4 | 4 | 3 | 3 | 2 | 2 | – | – | – | – | – |
| S/N..DB | 24 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 24 | – | – | – | – | – |
| S/N..PROB.A | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | – | – | – | – | – |
| S/N..PROB.B | 98 | 89 | 92 | 94 | 96 | 97 | 97 | 98 | 98 | – | – | – | – | – |
| S/N..PROB.C | 73 | 43 | 48 | 54 | 60 | 66 | 70 | 74 | 76 | – | – | – | – | – |
| S/N..PROB.D | 29 | 13 | 15 | 18 | 21 | 24 | 27 | 29 | 30 | – | – | – | – | – |

```
     1          JUN      RECEIVER      SSN=   110              26.015
TRANSMITTER             RECEIVER             AZIMUTHS          N.MILES
 SITE C                 RCVR 0              61.0 262.8         1493.7
```

### TOTAL RELIABILITY(T.REL.)

REQ. S/N= 0DB(A), 10DB(B), 20DB(C), 30DB(D)

| GMT | A | B | C | D | GMT | A | B | C | D | GMT | A | B | C | D |
|-----|----|----|----|----|-----|----|----|----|----|-----|----|----|----|----|
| 2 | 99 | 96 | 66 | 22 | 10 | 83 | 52 | 22 | 3 | 18 | 99 | 99 | 96 | 59 |
| 4 | 96 | 86 | 49 | 14 | 12 | 92 | 71 | 32 | 6 | 20 | 99 | 99 | 93 | 56 |
| 6 | 89 | 69 | 29 | 5 | 14 | 99 | 94 | 60 | 21 | 22 | 99 | 99 | 92 | 49 |
| 8 | 80 | 60 | 22 | 3 | 16 | 99 | 99 | 84 | 41 | 24 | 99 | 99 | 89 | 44 |

```
      2          JUN            SSN=  110            26.015
   TRANSMITTER        RECEIVER          AZIMUTHS      N.MILES
     SITE C            RCVR 50          61.0 262.8    1493.7
   SIGMA= 1000 SQ. METERS                            ANT= 25DB
   OFF AZIMUTH   0 DEG.    MIN. ANGLE=  4 DEG.    OFF AZIMUTH   0 DEG.
   PWR=200.00KW  3 MC/S MAN.NOISE= -148 DBW   REQ.S/N=  0, 10, 20, 30DB
                        OPERATING FREQUENCIES
```

| | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **GMT 2 — MUF 20.5** | | | | | | | | | | | | | | | |
| | 1F- | 1F- | 1F- | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | 1F- | 1F- | - | - | MODE |
| | 64 | 53 | 44 | 59 | 59 | 60 | 62 | 42 | 49 | 60 | 63 | 63 | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 97 | 95 | 91 | 88 | 74 | 55 | 25 | 6 | - | - | C.PROB. |
| | 97 | 96 | 96 | 97 | 97 | 97 | 97 | 96 | 96 | 97 | 97 | 97 | - | - | DELAY |
| | 171 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 255 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 258 | - | - | FS.LOSS |
| | 5 | 24 | 20 | 21 | 18 | 17 | 15 | 9 | 7 | 5 | 4 | 4 | - | - | P. LOSS |
| | 22 | 1 | 4 | 4 | 6 | 9 | 10 | 18 | 20 | 22 | 23 | 24 | - | - | S/N..DB |
| | 99 | 58 | 75 | 76 | 84 | 92 | 94 | 99 | 99 | 99 | 99 | 99 | - | - | S/N..PROB.A |
| | 96 | 20 | 30 | 30 | 38 | 49 | 54 | 89 | 94 | 96 | 97 | 98 | - | - | S/N..PROB.B |
| | 63 | 3 | 6 | 7 | 10 | 16 | 18 | 43 | 54 | 62 | 68 | 73 | - | - | S/N..PROB.C |
| | 23 | 0 | 0 | 0 | 1 | 2 | 3 | 13 | 18 | 22 | 25 | 29 | - | - | S/N..PROB.D |
| **GMT 4 — MUF 23.5** | | | | | | | | | | | | | | | |
| | 1F- | 2F- | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | 1F- | 1F- | MODE |
| | 56 | 174 | 165 | 163 | 165 | 170 | 66 | 60 | 62 | 40 | 47 | 53 | 53 | 53 | ANGLE |
| | 50 | 98 | 96 | 92 | 85 | 76 | 96 | 90 | 79 | 78 | 63 | 46 | 26 | 12 | C.PROB. |
| | 96 | 101 | 100 | 100 | 100 | 100 | 97 | 97 | 97 | 96 | 96 | 96 | 96 | 96 | DELAY |
| | 173 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 258 | 242 | 243 | 245 | 247 | 248 | 249 | 251 | 253 | 255 | 256 | 258 | 260 | 262 | FS.LOSS |
| | 8 | 67 | 59 | 52 | 46 | 41 | 26 | 22 | 18 | 12 | 10 | 8 | 7 | 5 | P. LOSS |
| | 20 | -43 | -35 | -27 | -21 | -15 | 0 | 5 | 8 | 15 | 18 | 20 | 21 | 23 | S/N..DB |
| | 99 | 0 | 0 | 0 | 2 | 7 | 49 | 78 | 90 | 98 | 99 | 99 | 99 | 99 | S/N..PROB.A |
| | 93 | 0 | 0 | 0 | 0 | 0 | 16 | 32 | 45 | 77 | 88 | 93 | 95 | 97 | S/N..PROB.B |
| | 50 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 13 | 31 | 43 | 51 | 60 | 67 | S/N..PROB.C |
| | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 12 | 17 | 21 | 24 | S/N..PROB.D |
| **GMT 6 — MUF 24.3** | | | | | | | | | | | | | | | |
| | 1F- | - | 2F+ | 2F- | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F- | 1F+ | 1F+ | MODE |
| | 43 | - | 184 | 165 | 156 | 153 | 157 | 177 | 58 | 59 | 70 | 42 | 65 | 65 | ANGLE |
| | 5 | - | 94 | 93 | 87 | 78 | 67 | 42 | 82 | 68 | 50 | 52 | 16 | 6 | C.PROB. |
| | 96 | - | 102 | 100 | 99 | 99 | 99 | 101 | 97 | 97 | 97 | 96 | 97 | 97 | DELAY |
| | 173 | - | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 258 | - | 244 | 245 | 246 | 248 | 249 | 252 | 253 | 255 | 257 | 258 | 260 | 262 | FS.LOSS |
| | 12 | - | 88 | 70 | 63 | 57 | 50 | 40 | 25 | 21 | 18 | 12 | 14 | 13 | P. LOSS |
| | 16 | - | -63 | -45 | -38 | -31 | -24 | -14 | 2 | 6 | 9 | 16 | 14 | 16 | S/N..DB |
| | 99 | - | 0 | 0 | 0 | 0 | 0 | 6 | 66 | 81 | 91 | 99 | 98 | 99 | S/N..PROB.A |
| | 82 | - | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 34 | 46 | 82 | 75 | 81 | S/N..PROB.B |
| | 35 | - | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 12 | 34 | 28 | 33 | S/N..PROB.C |
| | 7 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 5 | 7 | | S/N..PROB.D |
| **GMT 8 — MUF 24.1** | | | | | | | | | | | | | | | |
| | 1F- | - | - | 2F+ | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F- | 1F+ | - | MODE |
| | 44 | - | - | 184 | 163 | 158 | 160 | 175 | 64 | 62 | 64 | 43 | 64 | - | ANGLE |
| | 50 | - | - | 88 | 85 | 76 | 64 | 38 | 81 | 66 | 47 | 51 | 12 | - | C.PROB. |
| | 96 | - | - | 101 | 100 | 100 | 100 | 101 | 97 | 97 | 97 | 96 | 97 | - | DELAY |
| | 173 | - | - | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 258 | - | - | 245 | 247 | 248 | 249 | 252 | 253 | 255 | 257 | 258 | 260 | - | FS.LOSS |
| | 14 | - | - | 86 | 69 | 62 | 56 | 44 | 27 | 23 | 20 | 14 | 15 | - | P. LOSS |
| | 14 | - | - | -61 | -44 | -37 | -30 | -18 | 0 | 4 | 7 | 14 | 12 | - | S/N..DB |
| | 98 | - | - | 0 | 0 | 0 | 0 | 2 | 49 | 72 | 85 | 98 | 96 | - | S/N..PROB.A |
| | 73 | - | - | 0 | 0 | 0 | 0 | 0 | 14 | 26 | 38 | 73 | 65 | - | S/N..PROB.B |
| | 27 | - | - | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 8 | 27 | 22 | - | S/N..PROB.C |
| | 4 | - | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | - | S/N..PROB.D |

OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 23.2 | | | | | | | | | | | | | | |
| | 1F- | - | 2F+ | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | MODE |
| | 56 | - | 199 | 178 | 173 | 175 | 181 | 76 | 50 | 45 | 49 | 50 | 50 | 50 | ANGLE |
| | 50 | - | 93 | 90 | 82 | 72 | 59 | 89 | 88 | 76 | 61 | 44 | 22 | 8 | C.PROB. |
| | 96 | - | 103 | 101 | 101 | 101 | 101 | 98 | 96 | 96 | 96 | 96 | 96 | 96 | DELAY |
| | 172 | - | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 257 | - | 244 | 245 | 247 | 248 | 249 | 251 | 253 | 255 | 256 | 258 | 260 | 262 | FS.LOSS |
| | 13 | - | 90 | 72 | 64 | 57 | 50 | 30 | 22 | 19 | 15 | 13 | 10 | 8 | P. LOSS |
| | 14 | - | -65 | -47 | -39 | -31 | -24 | -3 | 4 | 9 | 12 | 15 | 18 | 20 | S/N..DB |
| | 98 | - | 0 | 0 | 0 | 0 | 0 | 35 | 76 | 90 | 96 | 98 | 99 | 99 | S/N..PROB.A |
| | 76 | - | 0 | 0 | 0 | 0 | 0 | 7 | 29 | 46 | 62 | 78 | 90 | 93 | S/N..PROB.B |
| | 29 | - | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 12 | 20 | 31 | 44 | 50 | S/N..PROB.C |
| | 5 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 6 | 11 | 14 | S/N..PROB.D |
| 12 | 22.3 | | | | | | | | | | | | | | |
| | 1F- | 2F- | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | - | MODE |
| | 58 | 187 | 175 | 171 | 173 | 179 | 75 | 49 | 44 | 47 | 56 | 54 | 54 | - | ANGLE |
| | 50 | 99 | 96 | 91 | 83 | 69 | 97 | 96 | 88 | 73 | 53 | 30 | 8 | - | C.PROB. |
| | 97 | 102 | 101 | 100 | 101 | 101 | 98 | 96 | 96 | 96 | 96 | 96 | 96 | - | DELAY |
| | 172 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 257 | 242 | 244 | 245 | 247 | 248 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | - | FS.LOSS |
| | 11 | 74 | 66 | 58 | 51 | 45 | 29 | 21 | 17 | 14 | 11 | 10 | 8 | - | P. LOSS |
| | 17 | -50 | -41 | -33 | -26 | -20 | -3 | 6 | 9 | 14 | 16 | 18 | 20 | - | S/N..DB |
| | 99 | 0 | 0 | 0 | 0 | 2 | 37 | 82 | 92 | 98 | 99 | 99 | 99 | - | S/N..PROB.A |
| | 86 | 0 | 0 | 0 | 0 | 0 | 10 | 36 | 49 | 72 | 82 | 88 | 94 | - | S/N..PROB.B |
| | 40 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 16 | 28 | 35 | 43 | 54 | - | S/N..PROB.C |
| | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 6 | 9 | 12 | 18 | - | S/N..PROB.D |
| 14 | 22.3 | | | | | | | | | | | | | | |
| | 1F- | 2F- | 2F- | 1F+ | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | - | MODE |
| | 52 | 154 | 153 | 65 | 42 | 53 | 53 | 55 | 61 | 73 | 50 | 50 | 50 | - | ANGLE |
| | 50 | 99 | 97 | 99 | 99 | 99 | 97 | 90 | 75 | 53 | 53 | 30 | 8 | - | C.PROB. |
| | 96 | 99 | 99 | 97 | 96 | 96 | 96 | 96 | 97 | 97 | 96 | 96 | 96 | - | DELAY |
| | 172 | 159 | 160 | 161 | 163 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 257 | 241 | 243 | 245 | 246 | 247 | 249 | 251 | 253 | 255 | 256 | 258 | 260 | - | FS.LOSS |
| | 6 | 50 | 43 | 26 | 20 | 21 | 19 | 16 | 14 | 13 | 6 | 5 | 4 | - | P. LOSS |
| | 21 | -27 | -20 | -3 | 4 | 4 | 7 | 11 | 13 | 15 | 21 | 22 | 24 | - | S/N..DB |
| | 99 | 0 | 2 | 37 | 76 | 75 | 87 | 95 | 97 | 98 | 99 | 99 | 99 | - | S/N..PROB.A |
| | 95 | 0 | 0 | 9 | 28 | 27 | 41 | 57 | 71 | 77 | 95 | 96 | 98 | - | S/N..PROB.B |
| | 58 | 0 | 0 | 0 | 5 | 4 | 11 | 20 | 27 | 31 | 57 | 63 | 75 | - | S/N..PROB.C |
| | 20 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 7 | 19 | 22 | 30 | - | S/N..PROB.D |
| 16 | 22.8 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | - | MODE |
| | 54 | 42 | 43 | 44 | 45 | 46 | 48 | 52 | 59 | 70 | 48 | 54 | 54 | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 97 | 86 | 62 | 62 | 34 | 7 | - | C.PROB. |
| | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | 96 | 96 | 96 | - | DELAY |
| | 172 | 158 | 160 | 162 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 257 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | 256 | 258 | 260 | - | FS.LOSS |
| | 2 | 13 | 11 | 10 | 9 | 8 | 8 | 7 | 7 | 7 | 2 | 2 | 1 | - | P. LOSS |
| | 26 | 9 | 11 | 14 | 16 | 17 | 18 | 19 | 19 | 20 | 26 | 26 | 27 | - | S/N..DB |
| | 99 | 94 | 97 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | S/N..PROB.A |
| | 99 | 48 | 60 | 79 | 88 | 87 | 90 | 91 | 92 | 93 | 99 | 99 | 99 | - | S/N..PROB.B |
| | 83 | 12 | 17 | 27 | 35 | 41 | 45 | 47 | 49 | 50 | 82 | 82 | 87 | - | S/N..PROB.C |
| | 37 | 1 | 1 | 4 | 6 | 12 | 13 | 15 | 16 | 16 | 35 | 36 | 41 | - | S/N..PROB.D |

## OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 21.2 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | 1F- | - | - | MODE |
| | 62 | 49 | 50 | 51 | 53 | 55 | 57 | 63 | 44 | 53 | 62 | 62 | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 92 | 89 | 67 | 38 | 14 | - | - | C.PROB. |
| | 97 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 96 | 96 | 97 | 97 | - | - | DELAY |
| | 171 | 158 | 161 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 256 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 258 | - | - | FS.LOSS |
| | 1 | 10 | 9 | 8 | 8 | 7 | 7 | 7 | 2 | 1 | 1 | 1 | - | - | P. LOSS |
| | 26 | 11 | 14 | 16 | 17 | 18 | 18 | 19 | 25 | 26 | 26 | 27 | - | - | S/N..DB |
| | 99 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | S/N..PROB.A |
| | 99 | 61 | 77 | 89 | 87 | 90 | 90 | 91 | 99 | 99 | 99 | 99 | - | - | S/N..PROB.B |
| | 84 | 19 | 26 | 36 | 42 | 45 | 45 | 47 | 80 | 81 | 82 | 85 | - | - | S/N..PROB.C |
| | 38 | 2 | 4 | 8 | 14 | 16 | 16 | 17 | 35 | 36 | 37 | 40 | - | - | S/N..PROB.D |
| 20 | 19.7 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | 1F- | 1F- | - | - | - | MODE |
| | 67 | 53 | 55 | 56 | 58 | 61 | 41 | 46 | 54 | 67 | 67 | - | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 98 | 96 | 97 | 89 | 71 | 45 | 15 | - | - | - | C.PROB. |
| | 97 | 96 | 96 | 96 | 97 | 97 | 96 | 96 | 96 | 97 | 97 | - | - | - | DELAY |
| | 170 | 159 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | - | - | - | NOISE |
| | 255 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | - | - | - | FS.LOSS |
| | 1 | 10 | 9 | 9 | 8 | 8 | 3 | 2 | 2 | 1 | 1 | - | - | - | P. LOSS |
| | 25 | 12 | 15 | 16 | 17 | 17 | 23 | 24 | 25 | 26 | 26 | - | - | - | S/N..DB |
| | 99 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | S/N..PROB.A |
| | 99 | 66 | 83 | 84 | 87 | 87 | 97 | 98 | 99 | 99 | 99 | - | - | - | S/N..PROB.B |
| | 80 | 21 | 31 | 38 | 42 | 42 | 70 | 74 | 80 | 81 | 82 | - | - | - | S/N..PROB.C |
| | 36 | 3 | 6 | 12 | 14 | 14 | 29 | 31 | 35 | 36 | 37 | - | - | - | S/N..PROB.D |
| 22 | 18.1 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | - | - | - | - | MODE |
| | 73 | 60 | 41 | 42 | 44 | 47 | 49 | 57 | 72 | 73 | - | - | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 98 | 97 | 93 | 77 | 52 | 17 | - | - | - | - | C.PROB. |
| | 97 | 97 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | - | - | - | - | DELAY |
| | 169 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | - | - | - | - | NOISE |
| | 253 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | - | - | - | - | FS.LOSS |
| | 2 | 11 | 5 | 5 | 4 | 3 | 3 | 2 | 2 | 1 | - | - | - | - | P. LOSS |
| | 24 | 14 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | - | - | - | - | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | S/N..PROB.A |
| | 98 | 75 | 92 | 94 | 96 | 97 | 97 | 98 | 99 | 99 | - | - | - | - | S/N..PROB.B |
| | 76 | 28 | 48 | 54 | 60 | 66 | 70 | 74 | 80 | 81 | - | - | - | - | S/N..PROB.C |
| | 32 | 5 | 18 | 21 | 23 | 26 | 29 | 31 | 35 | 36 | - | - | - | - | S/N..PROB.D |
| 24 | 16.6 | | | | | | | | | | | | | | |
| | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | - | - | - | - | - | MODE |
| | 75 | 41 | 43 | 45 | 48 | 51 | 55 | 68 | 75 | - | - | - | - | - | ANGLE |
| | 5 | 99 | 98 | 96 | 93 | 88 | 80 | 58 | 22 | - | - | - | - | - | C.PROB. |
| | 98 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 98 | - | - | - | - | - | DELAY |
| | 168 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | - | - | - | - | - | NOISE |
| | 252 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | - | - | - | - | - | FS.LOSS |
| | 2 | 7 | 5 | 5 | 4 | 3 | 3 | 2 | 2 | - | - | - | - | - | P. LOSS |
| | 24 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | - | - | - | - | - | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | S/N..PROB.A |
| | 98 | 89 | 92 | 94 | 96 | 97 | 97 | 98 | 99 | - | - | - | - | - | S/N..PROB.B |
| | 76 | 44 | 48 | 54 | 60 | 66 | 70 | 74 | 80 | - | - | - | - | - | S/N..PROB.C |
| | 3 | 13 | 15 | 18 | 21 | 24 | 27 | 29 | 34 | - | - | - | - | - | S/N..PROB.D |

2      JUN        SSN=   110         26.015

TRANSMITTER      RECEIVER        AZIMUTHS      N.MILES

SITE C           RCVR 50        61.0 262.8     1493.7

## TOTAL RELIABILITY(T.REL.)

REQ. S/N= 0DB(A), 10DB(B), 20DB(C), 30DB(D)

| GMT | A | B | C | D | GMT | A | B | C | D | GMT | A | B | C | D |
|-----|----|----|----|----|-----|----|----|----|----|-----|----|----|----|----|
| 2 | 99 | 95 | 60 | 21 | 10 | 89 | 64 | 25 | 4 | 18 | 99 | 99 | 90 | 51 |
| 4 | 97 | 85 | 47 | 14 | 12 | 95 | 78 | 38 | 8 | 20 | 99 | 99 | 92 | 53 |
| 6 | 79 | 60 | 24 | 3 | 14 | 99 | 87 | 48 | 16 | 22 | 99 | 99 | 92 | 54 |
| 8 | 74 | 48 | 17 | 2 | 16 | 99 | 99 | 76 | 36 | 24 | 99 | 99 | 89 | 47 |

```
          3        JUN          SSN=  110              26.015
    TRANSMITTER        RECEIVER         AZIMUTHS        N.MILES
       SITE C          RCVR 100        61.0 262.8       1493.7
  SIGMA= 1000 SQ. METERS                                ANT= 25DB
  OFF AZIMUTH   0 DEG.    MIN. ANGLE=  4 DEG.    OFF AZIMUTH   0 DEG.
  PWR=200.00KW   3 MC/S MAN.NOISE= -148 DBW   REQ.S/N=  0, 10, 20, 30DB
                        OPERATING FREQUENCIES
```

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 21.5 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | - | - | MODE |
| | 52 | 75 | 70 | 69 | 69 | 70 | 73 | 81 | 98 | 42 | 51 | 51 | - | - | ANGLE |
| | 50 | 99 | 99 | 98 | 96 | 93 | 88 | 72 | 50 | 65 | 42 | 15 | - | - | C.PROB. |
| | 94 | 98 | 97 | 97 | 97 | 97 | 97 | 98 | 99 | 93 | 94 | 94 | - | - | DELAY |
| | 171 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 256 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 253 | 254 | 256 | 258 | - | - | FS.LOSS |
| | 2 | 27 | 24 | 21 | 18 | 17 | 15 | 14 | 13 | 3 | 2 | 2 | - | - | P. LOSS |
| | 25 | -2 | 1 | 4 | 6 | 8 | 10 | 13 | 13 | 25 | 26 | 26 | - | - | S/N..DB |
| | 99 | 39 | 59 | 76 | 84 | 90 | 94 | 97 | 97 | 99 | 99 | 99 | - | - | S/N..PROB.A |
| | 99 | 11 | 20 | 30 | 38 | 45 | 54 | 69 | 71 | 98 | 99 | 99 | - | - | S/N..PROB.B |
| | 81 | 1 | 3 | 7 | 10 | 14 | 18 | 26 | 27 | 77 | 82 | 82 | - | - | S/N..PROB.C |
| | 34 | 0 | 0 | 0 | 1 | 2 | 3 | 5 | 5 | 31 | 35 | 36 | - | - | S/N..PROB.D |
| 4 | 24.7 | | | | | | | | | | | | | | |
| | 1F- | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | MODE |
| | 43 | 170 | 158 | 154 | 154 | 80 | 73 | 71 | 75 | 86 | 89 | 89 | 40 | 40 | ANGLE |
| | 50 | 98 | 97 | 93 | 88 | 97 | 95 | 87 | 73 | 55 | 38 | 23 | 35 | 18 | C.PROB. |
| | 94 | 100 | 99 | 99 | 99 | 98 | 97 | 97 | 98 | 98 | 98 | 98 | 93 | 93 | DELAY |
| | 173 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 258 | 242 | 243 | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | 261 | FS.LOSS |
| | 4 | 54 | 48 | 43 | 38 | 29 | 26 | 22 | 19 | 16 | 15 | 14 | 3 | 3 | P. LOSS |
| | 24 | -29 | -23 | -17 | -12 | -3 | 0 | 5 | 8 | 11 | 12 | 14 | 25 | 27 | S/N..DB |
| | 99 | 0 | 1 | 4 | 12 | 38 | 49 | 78 | 90 | 94 | 96 | 98 | 99 | 99 | S/N..PROB.A |
| | 98 | 0 | 0 | 0 | 1 | 10 | 16 | 32 | 45 | 56 | 62 | 73 | 98 | 99 | S/N..PROB.B |
| | 75 | 0 | 0 | 0 | 0 | 1 | 2 | 7 | 13 | 19 | 22 | 29 | 80 | 84 | S/N..PROB.C |
| | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 4 | 6 | 33 | 38 | S/N..PROB.D |
| 6 | 21.0 | | | | | | | | | | | | | | |
| | 1F+ | - | 2F+ | 2F+ | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | MODE |
| | 81 | - | 191 | 182 | 149 | 143 | 144 | 75 | 69 | 75 | 78 | 78 | 78 | - | ANGLE |
| | 5 | - | 93 | 88 | 89 | 82 | 72 | 89 | 77 | 59 | 42 | 27 | 11 | - | C.PROB. |
| | 98 | - | 102 | 101 | 99 | 98 | 98 | 98 | 97 | 98 | 98 | 98 | 98 | - | DELAY |
| | 171 | - | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 256 | - | 244 | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | - | FS.LOSS |
| | 2 | - | 87 | 78 | 51 | 46 | 41 | 29 | 24 | 21 | 19 | 17 | 14 | - | P. LOSS |
| | 7 | - | -62 | -53 | -25 | -20 | -15 | -2 | 2 | 6 | 9 | 11 | 13 | - | S/N..DB |
| | 87 | - | 0 | 0 | 0 | 1 | 5 | 39 | 66 | 81 | 91 | 95 | 97 | - | S/N..PROB.A |
| | 40 | - | 0 | 0 | 0 | 0 | 0 | 9 | 22 | 34 | 46 | 57 | 70 | - | S/N..PROB.B |
| | 9 | - | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 12 | 17 | 25 | - | S/N..PROB.C |
| | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | - | S/N..PROB.D |
| 8 | 20.7 | | | | | | | | | | | | | | |
| | 1F+ | - | - | 2F+ | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | MODE |
| | 81 | - | - | 190 | 160 | 150 | 148 | 164 | 73 | 77 | 77 | 77 | 77 | - | ANGLE |
| | 55 | - | - | 86 | 88 | 80 | 69 | 44 | 75 | 57 | 38 | 23 | 8 | - | C.PROB. |
| | 98 | - | - | 102 | 99 | 99 | 99 | 100 | 97 | 98 | 98 | 98 | 98 | - | DELAY |
| | 171 | - | - | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 256 | - | - | 245 | 247 | 248 | 249 | 252 | 253 | 255 | 257 | 258 | 260 | - | FS.LOSS |
| | 22 | - | - | 85 | 55 | 50 | 46 | 37 | 27 | 23 | 20 | 18 | 16 | - | P. LOSS |
| | 5 | - | - | -60 | -30 | -25 | -19 | -10 | 0 | 4 | 7 | 9 | 12 | - | S/N..DB |
| | 79 | - | - | 0 | 0 | 0 | 2 | 13 | 49 | 72 | 85 | 91 | 96 | - | S/N..PROB.A |
| | 31 | - | - | 0 | 0 | 0 | 0 | 1 | 14 | 26 | 38 | 47 | 65 | - | S/N..PROB.B |
| | 6 | - | - | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 8 | 13 | 22 | - | S/N..PROB.C |
| | 0 | - | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | - | S/N..PROB.D |

## OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---------|
| 10 | 24.5 | | | | | | | | | | | | | | |
| | 1F- | - | 2F+ | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | MODE |
| | 43 | - | 205 | 172 | 164 | 164 | 168 | 83 | 80 | 90 | 87 | 87 | 87 | - | ANGLE |
| | 50 | - | 92 | 91 | 85 | 75 | 64 | 85 | 70 | 51 | 33 | 18 | 5 | - | C.PROB. |
| | 93 | - | 103 | 100 | 100 | 100 | 100 | 98 | 98 | 98 | 98 | 98 | 98 | - | DELAY |
| | 173 | - | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 258 | - | 244 | 245 | 247 | 248 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | - | FS.LOSS |
| | 6 | - | 89 | 57 | 52 | 46 | 41 | 30 | 25 | 22 | 19 | 17 | 15 | - | P. LOSS |
| | 22 | - | -64 | -32 | -26 | -21 | -16 | -3 | 1 | 5 | 8 | 10 | 12 | - | S/N..DB |
| | 99 | - | 0 | 0 | 0 | 1 | 4 | 35 | 60 | 77 | 88 | 93 | 96 | - | S/N..PROB.A |
| | 96 | - | 0 | 0 | 0 | 0 | 0 | 7 | 19 | 30 | 42 | 51 | 65 | - | S/N..PROB.B |
| | 64 | - | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 10 | 15 | 22 | - | S/N..PROB.C |
| | 21 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | - | S/N..PROB.D |
| 12 | 23.5 | | | | | | | | | | | | | | |
| | 1F- | 2F+ | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F- | 1F+ | 1F+ | 1F+ | 1F- | 1F- | - | MODE |
| | 45 | 202 | 169 | 163 | 163 | 167 | 83 | 41 | 82 | 89 | 89 | 41 | 41 | - | ANGLE |
| | 50 | 97 | 97 | 93 | 86 | 75 | 95 | 97 | 67 | 41 | 18 | 44 | 16 | - | C.PROB. |
| | 94 | 103 | 100 | 100 | 100 | 100 | 98 | 93 | 98 | 98 | 98 | 93 | 93 | - | DELAY |
| | 173 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 257 | 242 | 243 | 245 | 247 | 248 | 249 | 250 | 253 | 255 | 257 | 257 | 260 | - | FS.LOSS |
| | 5 | 83 | 53 | 47 | 42 | 37 | 29 | 11 | 21 | 18 | 16 | 5 | 4 | - | P. LOSS |
| | 23 | -58 | -28 | -22 | -16 | -12 | -3 | 16 | 5 | 9 | 11 | 23 | 24 | - | S/N..DB |
| | 99 | 0 | 0 | 1 | 5 | 12 | 37 | 99 | 80 | 90 | 95 | 99 | 99 | - | S/N..PROB.A |
| | 97 | 0 | 0 | 0 | 0 | 1 | 10 | 82 | 34 | 46 | 57 | 97 | 98 | - | S/N..PROB.B |
| | 67 | 0 | 0 | 0 | 0 | 0 | 1 | 36 | 8 | 14 | 19 | 68 | 75 | - | S/N..PROB.C |
| | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 2 | 3 | 25 | 30 | - | S/N..PROB.D |
| 14 | 19.4 | | | | | | | | | | | | | | |
| | 1F+ | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | MODE |
| | 87 | 146 | 144 | 72 | 65 | 63 | 63 | 67 | 75 | 86 | 86 | 86 | - | - | ANGLE |
| | 50 | 99 | 98 | 99 | 99 | 98 | 95 | 86 | 67 | 41 | 18 | 5 | - | - | C.PROB. |
| | 98 | 99 | 98 | 97 | 97 | 97 | 97 | 97 | 98 | 98 | 98 | 98 | - | - | DELAY |
| | 170 | 159 | 160 | 161 | 163 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 255 | 241 | 243 | 245 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 258 | - | - | FS.LOSS |
| | 13 | 41 | 36 | 26 | 23 | 21 | 19 | 16 | 14 | 13 | 12 | 11 | - | - | P. LOSS |
| | 13 | -17 | -12 | -3 | 1 | 4 | 7 | 10 | 12 | 14 | 15 | 16 | - | - | S/N..DB |
| | 97 | 4 | 10 | 37 | 59 | 75 | 87 | 93 | 97 | 98 | 98 | 99 | - | - | S/N..PROB.A |
| | 70 | 0 | 1 | 9 | 18 | 27 | 41 | 52 | 66 | 72 | 78 | 82 | - | - | S/N..PROB.B |
| | 27 | 0 | 0 | 0 | 2 | 4 | 11 | 17 | 24 | 28 | 32 | 36 | - | - | S/N..PROB.C |
| | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 6 | 7 | 9 | - | - | S/N..PROB.D |
| 16 | 24.0 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | - | MODE |
| | 42 | 52 | 53 | 54 | 55 | 57 | 59 | 64 | 73 | 88 | 88 | 41 | 41 | - | ANGLE |
| | 5? | 99 | 99 | 99 | 99 | 99 | 99 | 94 | 78 | 49 | 20 | 51 | 16 | - | C.PROB. |
| | 93 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | 97 | 98 | 98 | 93 | 93 | - | DELAY |
| | 173 | 158 | 160 | 162 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 258 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 257 | 260 | - | FS.LOSS |
| | 1 | 13 | 12 | 11 | 10 | 9 | 9 | 8 | 8 | 8 | 8 | 1 | 1 | - | P. LOSS |
| | 28 | 8 | 11 | 13 | 15 | 16 | 17 | 18 | 18 | 19 | 19 | 28 | 28 | - | S/N..DB |
| | 99 | 92 | 97 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | S/N..PROB.A |
| | 99 | 44 | 60 | 73 | 84 | 84 | 87 | 89 | 90 | 90 | 91 | 99 | 99 | - | S/N..PROB.B |
| | 89 | 10 | 17 | 23 | 31 | 38 | 41 | 43 | 45 | 46 | 47 | 88 | 90 | - | S/N..PROB.C |
| | 45 | 0 | 1 | 3 | 5 | 10 | 11 | 13 | 13 | 14 | 14 | 43 | 45 | - | S/N..PROB.D |

OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 22.3 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | - | - | MODE |
| | 51 | 59 | 60 | 61 | 63 | 66 | 68 | 76 | 89 | 96 | 48 | 50 | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 98 | 87 | 60 | 27 | 54 | 27 | - | - | C.PROB. |
| | 94 | 97 | 97 | 97 | 97 | 97 | 97 | 98 | 98 | 99 | 94 | 94 | - | - | DELAY |
| | 172 | 158 | 161 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 256 | 241 | 243 | 245 | 246 | 247 | 249 | 251 | 253 | 255 | 256 | 258 | - | - | FS.LOSS |
| | 1 | 11 | 10 | 9 | 8 | 8 | 8 | 8 | 8 | 8 | 1 | 1 | - | - | P. LOSS |
| | 27 | 11 | 14 | 16 | 16 | 17 | 18 | 18 | 18 | 19 | 27 | 28 | - | - | S/N..DB |
| | 99 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | S/N..PROB.A |
| | 99 | 61 | 77 | 89 | 84 | 87 | 90 | 89 | 90 | 90 | 99 | 99 | - | - | S/N..PROB.B |
| | 86 | 19 | 26 | 36 | 39 | 42 | 45 | 44 | 45 | 46 | 85 | 88 | - | - | S/N..PROB.C |
| | 40 | 2 | 4 | 8 | 12 | 14 | 16 | 15 | 16 | 16 | 40 | 44 | - | - | S/N..PROB.D |
| 20 | 20.7 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | - | - | MODE |
| | 55 | 64 | 65 | 67 | 69 | 72 | 76 | 86 | 100 | 50 | 55 | 55 | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 98 | 95 | 89 | 69 | 37 | 59 | 28 | 7 | - | - | C.PROB. |
| | 94 | 97 | 97 | 97 | 97 | 97 | 98 | 98 | 99 | 94 | 94 | 94 | - | - | DELAY |
| | 171 | 159 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 255 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 254 | 254 | 256 | 258 | - | - | FS.LOSS |
| | 1 | 11 | 10 | 9 | 9 | 8 | 8 | 8 | 9 | 1 | 1 | 1 | - | - | P. LOSS |
| | 27 | 12 | 15 | 15 | 16 | 17 | 17 | 18 | 17 | 27 | 27 | 28 | - | - | S/N..DB |
| | 99 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | S/N..PROB.A |
| | 99 | 66 | 83 | 80 | 84 | 87 | 87 | 89 | 87 | 99 | 99 | 99 | - | - | S/N..PROB.B |
| | 86 | 21 | 31 | 35 | 39 | 42 | 42 | 44 | 42 | 85 | 85 | 88 | - | - | S/N..PROB.C |
| | 41 | 3 | 6 | 10 | 12 | 14 | 14 | 15 | 14 | 39 | 40 | 44 | - | - | S/N..PROB.D |
| 22 | 19.0 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | 1F- | - | - | - | MODE |
| | 62 | 70 | 72 | 75 | 78 | 81 | 86 | 43 | 53 | 62 | 62 | - | - | - | ANGLE |
| | 50 | 99 | 99 | 98 | 95 | 89 | 79 | 84 | 63 | 32 | 7 | - | - | - | C.PROB. |
| | 94 | 97 | 97 | 98 | 98 | 98 | 98 | 94 | 94 | 94 | 94 | - | - | - | DELAY |
| | 170 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | - | - | - | NOISE |
| | 254 | 241 | 243 | 245 | 246 | 248 | 249 | 250 | 253 | 254 | 256 | - | - | - | FS.LOSS |
| | 1 | 11 | 10 | 10 | 9 | 9 | 9 | 1 | 1 | 1 | 1 | - | - | - | P. LOSS |
| | 26 | 13 | 14 | 15 | 16 | 16 | 16 | 26 | 26 | 27 | 27 | - | - | - | S/N..DB |
| | 99 | 98 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | S/N..PROB.A |
| | 99 | 70 | 75 | 80 | 84 | 84 | 84 | 99 | 99 | 99 | 99 | - | - | - | S/N..PROB.B |
| | 82 | 24 | 31 | 35 | 39 | 39 | 38 | 82 | 84 | 85 | 85 | - | - | - | S/N..PROB.C |
| | 37 | 4 | 8 | 10 | 12 | 12 | 12 | 37 | 38 | 39 | 40 | - | - | - | S/N..PROB.D |
| 24 | 17.4 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | 1F- | - | - | - | - | MODE |
| | 63 | 72 | 75 | 79 | 83 | 89 | 42 | 52 | 63 | 63 | - | - | - | - | ANGLE |
| | 50 | 98 | 96 | 91 | 84 | 73 | 85 | 66 | 37 | 8 | - | - | - | - | C.PROB. |
| | 95 | 97 | 98 | 98 | 98 | 98 | 93 | 94 | 95 | 95 | - | - | - | - | DELAY |
| | 169 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | - | - | - | - | NOISE |
| | 252 | 241 | 243 | 245 | 246 | 248 | 248 | 251 | 253 | 255 | - | - | - | - | FS.LOSS |
| | 1 | 11 | 10 | 10 | 9 | 9 | 1 | 1 | 1 | 1 | - | - | - | - | P. LOSS |
| | 26 | 13 | 14 | 15 | 15 | 16 | 25 | 26 | 26 | 27 | - | - | - | - | S/N..DB |
| | 99 | 97 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | S/N..PROB.A |
| | 99 | 69 | 75 | 80 | 80 | 84 | 98 | 99 | 99 | 99 | - | - | - | - | S/N..PROB.B |
| | 82 | 26 | 30 | 34 | 34 | 38 | 80 | 82 | 84 | 85 | - | - | - | - | S/N..PROB.C |
| | 36 | 5 | 6 | 8 | 8 | 10 | 34 | 36 | 37 | 38 | - | - | - | - | S/N..PROB.D |

```
    3          JUN          SSN=  110           26.015
TRANSMITTER        RECEIVER          AZIMUTHS       N.MILES
SITE C             RCVR 100          61.0 262.8     1493.7
```

### TOTAL RELIABILITY(T.REL.)

REQ. S/N= 0DB(A), 10DB(B), 20DB(C), 30DB(D)

| GMT | A | B | C | D | | GMT | A | B | C | D | | GMT | A | B | C | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 99 | 85 | 64 | 27 | | 10 | 61 | 48 | 32 | 10 | | 18 | 99 | 99 | 70 | 34 |
| 4 | 91 | 56 | 38 | 15 | | 12 | 99 | 90 | 55 | 20 | | 20 | 99 | 98 | 72 | 36 |
| 6 | 71 | 38 | 9 | 0 | | 14 | 97 | 72 | 31 | 5 | | 22 | 99 | 98 | 87 | 47 |
| 8 | 56 | 24 | 5 | 0 | | 16 | 99 | 99 | 68 | 32 | | 24 | 99 | 98 | 85 | 44 |

```
          4         JUN          SSN=  110            26.015
    TRANSMITTER         RECEIVER           AZIMUTHS       N.MILES
     SITE C             RCVR 150           61.0 262.8      1493.7
  SIGMA= 1000 SQ. METERS                                 ANT= 25DB
  OFF AZIMUTH   0 DEG.    MIN. ANGLE=  4 DEG.    OFF AZIMUTH   0 DEG.
PWR=200.00KW   3 MC/S MAN.NOISE= -148 DBW   REQ.S/N=  0, 10, 20, 30DB
                    OPERATING FREQUENCIES
```

| GMT MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2 17.3** | | | | | | | | | | | | | | |
| 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | - | - | MODE |
| 108 | 82 | 79 | 78 | 79 | 81 | 84 | 94 | 107 | 107 | - | - | - | - | ANGLE |
| 50 | 99 | 99 | 97 | 95 | 91 | 85 | 66 | 36 | 8 | - | - | - | - | C.PROB. |
| 100 | 98 | 98 | 98 | 98 | 98 | 98 | 99 | 100 | 100 | - | - | - | - | DELAY |
| 169 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | - | - | - | - | NOISE |
| 253 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 254 | 255 | - | - | - | - | FS.LOSS |
| 13 | 27 | 23 | 21 | 19 | 17 | 16 | 14 | 13 | 12 | - | - | - | - | P. LOSS |
| 13 | -2 | 1 | 4 | 6 | 8 | 10 | 12 | 13 | 15 | - | - | - | - | S/N..DB |
| 97 | 39 | 59 | 76 | 84 | 90 | 94 | 96 | 97 | 98 | - | - | - | - | S/N..PROB.A |
| 68 | 11 | 20 | 30 | 38 | 45 | 54 | 63 | 71 | 77 | - | - | - | - | S/N..PROB.B |
| 25 | 1 | 3 | 7 | 10 | 14 | 18 | 23 | 27 | 31 | - | - | - | - | S/N..PROB.C |
| 5 | 0 | 0 | 0 | 1 | 2 | 3 | 4 | 5 | 7 | - | - | - | - | S/N..PROB.D |
| **4 19.7** | | | | | | | | | | | | | | |
| 1F+ | 2F+ | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | MODE |
| 102 | 199 | 152 | 145 | 144 | 86 | 81 | 82 | 88 | 100 | 100 | 100 | 100 | - | ANGLE |
| 50 | 96 | 97 | 94 | 90 | 96 | 93 | 83 | 67 | 47 | 31 | 17 | 6 | - | C.PROB. |
| 99 | 103 | 99 | 98 | 98 | 98 | 98 | 98 | 98 | 99 | 99 | 99 | 99 | - | DELAY |
| 170 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| 255 | 242 | 243 | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 257 | 259 | 261 | - | FS.LOSS |
| 17 | 75 | 49 | 43 | 39 | 28 | 26 | 22 | 19 | 17 | 15 | 14 | 13 | - | P. LOSS |
| 9 | -50 | -24 | -18 | -13 | -3 | 0 | 5 | 7 | 10 | 12 | 13 | 15 | - | S/N..DB |
| 92 | 0 | 0 | 3 | 10 | 38 | 49 | 78 | 87 | 93 | 96 | 97 | 98 | - | S/N..PROB.A |
| 49 | 0 | 0 | 0 | 1 | 10 | 16 | 32 | 41 | 50 | 62 | 68 | 80 | - | S/N..PROB.B |
| 16 | 0 | 0 | 0 | 0 | 1 | 2 | 7 | 11 | 16 | 22 | 25 | 33 | - | S/N..PROB.C |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 5 | 8 | - | S/N..PROB.D |
| **6 20.1** | | | | | | | | | | | | | | |
| 1F+ | - | 2F+ | 2F+ | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | MODE |
| 93 | - | 196 | 190 | 145 | 136 | 133 | 81 | 81 | 92 | 90 | 90 | 90 | - | ANGLE |
| 53 | - | 92 | 86 | 91 | 85 | 77 | 85 | 70 | 51 | 34 | 20 | 7 | - | C.PROB. |
| 99 | - | 102 | 102 | 98 | 98 | 98 | 98 | 98 | 99 | 99 | 99 | 99 | - | DELAY |
| 171 | - | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| 255 | - | 244 | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | - | FS.LOSS |
| 21 | - | 86 | 77 | 51 | 47 | 43 | 28 | 24 | 21 | 19 | 17 | 15 | - | P. LOSS |
| 6 | - | -61 | -52 | -26 | -21 | -16 | -1 | 2 | 6 | 9 | 11 | 13 | - | S/N..DB |
| 81 | - | 0 | 0 | 0 | 1 | 4 | 43 | 66 | 81 | 91 | 95 | 97 | - | S/N..PROB.A |
| 34 | - | 0 | 0 | 0 | 0 | 0 | 11 | 22 | 34 | 46 | 57 | 70 | - | S/N..PROB.B |
| 7 | - | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 7 | 12 | 17 | 25 | - | S/N..PROB.C |
| 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | | - | S/N..PROB.D |
| **8 19.8** | | | | | | | | | | | | | | |
| 1F+ | - | 2F+ | 2F+ | 2F+ | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | MODE |
| 93 | - | 206 | 196 | 196 | 143 | 138 | 90 | 84 | 94 | 89 | 89 | - | - | ANGLE |
| 50 | - | 91 | 84 | 73 | 83 | 74 | 84 | 68 | 48 | 30 | 16 | - | - | C.PROB. |
| 99 | - | 103 | 102 | 102 | 98 | 98 | 99 | 98 | 99 | 98 | 98 | - | - | DELAY |
| 170 | - | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| 255 | - | 244 | 246 | 247 | 248 | 249 | 251 | 253 | 255 | 257 | 258 | - | - | FS.LOSS |
| 23 | - | 93 | 84 | 75 | 51 | 47 | 31 | 27 | 23 | 20 | 18 | - | - | P. LOSS |
| 3 | - | -68 | -59 | -50 | -26 | -20 | -4 | 0 | 4 | 7 | 9 | - | - | S/N..DB |
| 72 | - | 0 | 0 | 0 | 0 | 1 | 31 | 49 | 72 | 85 | 91 | - | - | S/N..PROB.A |
| 26 | - | 0 | 0 | 0 | 0 | 0 | 6 | 14 | 26 | 38 | 47 | - | - | S/N..PROB.B |
| 4 | - | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 8 | 13 | - | - | S/N..PROB.C |
| 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | - | - | S/N..PROB.D |

OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 19.3 | | | | | | | | | | | | | | |
| | 1F+ | - | 2F+ | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | MODE |
| | 101 | - | 210 | 167 | 158 | 154 | 156 | 91 | 93 | 99 | 99 | 99 | - | - | ANGLE |
| | 50 | - | 90 | 93 | 87 | 79 | 69 | 81 | 63 | 43 | 25 | 12 | - | - | C.PROB. |
| | 99 | - | 104 | 100 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | DELAY |
| | 170 | - | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 255 | - | 244 | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 257 | 258 | - | - | FS.LOSS |
| | 23 | - | 88 | 58 | 53 | 47 | 43 | 30 | 25 | 22 | 19 | 18 | - | - | P. LOSS |
| | 3 | - | -63 | -33 | -27 | -22 | -17 | -3 | 1 | 5 | 8 | 10 | - | - | S/N..DB |
| | 70 | - | 0 | 0 | 0 | 0 | 3 | 35 | 60 | 77 | 88 | 93 | - | - | S/N..PROB.A |
| | 25 | - | 0 | 0 | 0 | 0 | 0 | 7 | 19 | 30 | 42 | 51 | - | - | S/N..PROB.B |
| | 4 | - | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 10 | 15 | - | - | S/N..PROB.C |
| | 0 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | - | - | S/N..PROB.D |
| 12 | 18.6 | | | | | | | | | | | | | | |
| | 1F+ | 2F+ | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | - | MODE |
| | 102 | 209 | 163 | 155 | 152 | 95 | 89 | 88 | 97 | 100 | 100 | - | - | - | ANGLE |
| | 50 | 97 | 98 | 95 | 89 | 97 | 93 | 80 | 58 | 30 | 11 | - | - | - | C.PROB. |
| | 99 | 104 | 100 | 99 | 99 | 99 | 98 | 98 | 99 | 99 | 99 | - | - | - | DELAY |
| | 170 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | - | - | - | NOISE |
| | 254 | 242 | 243 | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 257 | - | - | - | FS.LOSS |
| | 20 | 82 | 53 | 48 | 43 | 32 | 29 | 24 | 21 | 18 | 16 | - | - | - | P. LOSS |
| | 7 | -58 | -29 | -23 | -17 | -6 | -3 | 2 | 5 | 9 | 11 | - | - | - | S/N..DB |
| | 85 | 0 | 0 | 1 | 4 | 27 | 37 | 63 | 80 | 90 | 95 | - | - | - | S/N..PROB.A |
| | 39 | 0 | 0 | 0 | 0 | 5 | 10 | 23 | 34 | 46 | 57 | - | - | - | S/N..PROB.B |
| | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 8 | 14 | 19 | - | - | - | S/N..PROB.C |
| | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | - | - | - | S/N..PROB.D |
| 14 | 18.6 | | | | | | | | | | | | | | |
| | 1F+ | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | - | MODE |
| | 98 | 138 | 85 | 78 | 74 | 73 | 74 | 79 | 91 | 97 | 97 | - | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 98 | 97 | 93 | 80 | 58 | 31 | 11 | - | - | - | C.PROB. |
| | 99 | 98 | 98 | 98 | 97 | 97 | 97 | 98 | 99 | 99 | 99 | - | - | - | DELAY |
| | 170 | 159 | 160 | 161 | 163 | 165 | 166 | 168 | 169 | 171 | 172 | - | - | - | NOISE |
| | 254 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 257 | - | - | - | FS.LOSS |
| | 14 | 41 | 29 | 26 | 23 | 21 | 19 | 16 | 14 | 13 | 12 | - | - | - | P. LOSS |
| | 12 | -18 | -6 | -2 | 1 | 4 | 7 | 10 | 12 | 14 | 15 | - | - | - | S/N..DB |
| | 96 | 3 | 26 | 41 | 59 | 75 | 87 | 93 | 97 | 98 | 98 | - | - | - | S/N..PROB.A |
| | 62 | 0 | 4 | 10 | 18 | 27 | 41 | 52 | 66 | 72 | 78 | - | - | - | S/N..PROB.B |
| | 22 | 0 | 0 | 1 | 2 | 4 | 11 | 17 | 24 | 28 | 32 | - | - | - | S/N..PROB.C |
| | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 6 | 7 | - | - | - | S/N..PROB.D |
| 16 | 19.1 | | | | | | | | | | | | | | |
| | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | - | MODE |
| | 99 | 62 | 63 | 64 | 66 | 68 | 70 | 77 | 87 | 99 | 99 | - | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 98 | 91 | 68 | 36 | 12 | - | - | - | C.PROB. |
| | 99 | 97 | 97 | 97 | 97 | 97 | 97 | 98 | 98 | 99 | 99 | - | - | - | DELAY |
| | 170 | 158 | 160 | 162 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | - | - | - | NOISE |
| | 255 | 241 | 243 | 245 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | - | - | - | FS.LOSS |
| | 9 | 13 | 12 | 11 | 10 | 10 | 9 | 9 | 9 | 9 | 9 | - | - | - | P. LOSS |
| | 17 | 8 | 10 | 13 | 15 | 16 | 16 | 17 | 17 | 18 | 18 | - | - | - | S/N..DB |
| | 99 | 92 | 96 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | S/N..PROB.A |
| | 86 | 44 | 54 | 73 | 84 | 84 | 84 | 86 | 87 | 88 | 88 | - | - | - | S/N..PROB.B |
| | 40 | 10 | 14 | 23 | 31 | 38 | 37 | 39 | 41 | 42 | 43 | - | - | - | S/N..PROB.C |
| | 11 | 0 | 1 | 3 | 5 | 10 | 10 | 11 | 11 | 12 | 12 | - | - | - | S/N..PROB.D |

OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 17.9 | | | | | | | | | | | | | | |
| | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | - | - | MODE |
| | 106 | 69 | 70 | 72 | 74 | 77 | 80 | 89 | 106 | 106 | - | - | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 96 | 80 | 48 | 17 | - | - | - | - | C.PROB. |
| | 100 | 97 | 97 | 97 | 97 | 98 | 98 | 98 | 100 | 100 | - | - | - | - | DELAY |
| | 169 | 158 | 161 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | - | - | - | - | NOISE |
| | 253 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 254 | 255 | - | - | - | - | FS.LOSS |
| | 9 | 11 | 10 | 9 | 9 | 9 | 8 | 8 | 9 | 9 | - | - | - | - | P. LOSS |
| | 17 | 10 | 13 | 15 | 16 | 16 | 17 | 18 | 17 | 18 | - | - | - | - | S/N..DB |
| | 99 | 97 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | S/N..PROB.A |
| | 87 | 54 | 71 | 85 | 84 | 84 | 87 | 89 | 87 | 88 | - | - | - | - | S/N..PROB.B |
| | 42 | 16 | 23 | 32 | 39 | 39 | 42 | 44 | 42 | 43 | - | - | - | - | S/N..PROB.C |
| | 14 | 2 | 3 | 6 | 12 | 12 | 14 | 15 | 14 | 14 | - | - | - | - | S/N..PROB.D |
| 20 | 21.8 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | 1F- | 1F- | - | - | MODE |
| | 43 | 74 | 75 | 77 | 80 | 83 | 87 | 101 | 110 | - | 43 | 43 | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 96 | 92 | 85 | 61 | 24 | - | 47 | 18 | - | - | C.PROB. |
| | 94 | 97 | 98 | 98 | 98 | 98 | 98 | 99 | 100 | - | 94 | 94 | - | - | DELAY |
| | 172 | 159 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | - | 172 | 173 | - | - | NOISE |
| | 256 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 254 | - | 256 | 257 | - | - | FS.LOSS |
| | 1 | 11 | 10 | 10 | 9 | 9 | 9 | 9 | 9 | - | 1 | 1 | - | - | P. LOSS |
| | 28 | 11 | 14 | 15 | 15 | 16 | 16 | 17 | 16 | - | 27 | 28 | - | - | S/N..DB |
| | 99 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | 99 | 99 | - | - | S/N..PROB.A |
| | 99 | 59 | 78 | 80 | 80 | 84 | 84 | 86 | 84 | - | 99 | 99 | - | - | S/N..PROB.B |
| | 88 | 19 | 27 | 35 | 35 | 39 | 38 | 40 | 38 | - | 85 | 88 | - | - | S/N..PROB.C |
| | 43 | 2 | 5 | 10 | 10 | 12 | 12 | 13 | 12 | - | 40 | 44 | - | - | S/N..PROB.D |
| 22 | 20.0 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | - | - | - | MODE |
| | 50 | 80 | 82 | 85 | 89 | 93 | 99 | 116 | 116 | 50 | 50 | - | - | - | ANGLE |
| | 50 | 99 | 99 | 97 | 92 | 85 | 73 | 37 | 7 | 50 | 18 | - | - | - | C.PROB. |
| | 94 | 98 | 98 | 98 | 98 | 99 | 99 | 100 | 100 | 94 | 94 | - | - | - | DELAY |
| | 171 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | - | - | - | NOISE |
| | 254 | 241 | 243 | 245 | 246 | 248 | 249 | 252 | 254 | 254 | 256 | - | - | - | FS.LOSS |
| | 1 | 11 | 11 | 10 | 10 | 9 | 9 | 10 | 10 | 1 | 1 | - | - | - | P. LOSS |
| | 27 | 13 | 14 | 14 | 15 | 15 | 16 | 16 | 16 | 27 | 27 | - | - | - | S/N..DB |
| | 99 | 98 | 98 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | S/N..PROB.A |
| | 99 | 70 | 75 | 76 | 80 | 80 | 84 | 82 | 84 | 99 | 99 | - | - | - | S/N..PROB.B |
| | 85 | 24 | 31 | 32 | 35 | 35 | 38 | 37 | 38 | 85 | 85 | - | - | - | S/N..PROB.C |
| | 39 | 4 | 8 | 9 | 10 | 10 | 12 | 11 | 12 | 39 | 40 | - | - | - | S/N..PROB.D |
| 24 | 18.2 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | - | - | - | - | MODE |
| | 52 | 83 | 86 | 90 | 95 | 102 | 114 | 118 | 49 | 51 | - | - | - | - | ANGLE |
| | 50 | 97 | 94 | 88 | 79 | 67 | 53 | 12 | 53 | 19 | - | - | - | - | C.PROB. |
| | 94 | 98 | 98 | 99 | 99 | 99 | 100 | 101 | 94 | 94 | - | - | - | - | DELAY |
| | 169 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | - | - | - | - | NOISE |
| | 253 | 241 | 243 | 245 | 246 | 248 | 249 | 252 | 253 | 254 | - | - | - | - | FS.LOSS |
| | 1 | 11 | 11 | 10 | 10 | 10 | 10 | 10 | 1 | 1 | - | - | - | - | P. LOSS |
| | 26 | 13 | 13 | 14 | 15 | 15 | 15 | 16 | 26 | 27 | - | - | - | - | S/N..DB |
| | 99 | 97 | 97 | 98 | 99 | 99 | 98 | 99 | 99 | 99 | - | - | - | - | S/N..PROB.A |
| | 99 | 69 | 70 | 76 | 80 | 80 | 80 | 82 | 99 | 99 | - | - | - | - | S/N..PROB.B |
| | 84 | 26 | 26 | 30 | 34 | 34 | 34 | 36 | 84 | 85 | - | - | - | - | S/N..PROB.C |
| | 38 | 5 | 5 | 7 | 8 | 8 | 8 | 9 | 37 | 38 | - | - | - | - | S/N..PROB.D |

```
         4            JUN              SSN=  110              26.015
    TRANSMITTER          RECEIVER              AZIMUTHS         N.MILES
     SITE C              RCVR 150             61.0 262.8        1493.7

                      TOTAL RELIABILITY(T.REL.)

             REQ. S/N= 0DB(A), 10DB(B), 20DB(C), 30DB(D)

   GMT   A  B  C  D      GMT   A  B  C  D      GMT   A  B  C  D

    2    99 73 29  4      10   54 24  3  0      18   99 99 68 24

    4    88 51 17  2      12   75 32  7  0      20   99 99 62 28


    6    65 34  7  0      14   96 68 25  3      22   99 94 62 28

    8    59 24  4  0      16   99 99 70 22      24   99 90 60 25
```

40

```
        1           SEP              SSN=   110              26.015
    TRANSMITTER          RECEIVER            AZIMUTHS          N.MILES
      SITE C             RCVR 0            61.0 262.8          1493.7
  SIGMA= 1000 SQ. METERS                                      ANT= 25DB
  OFF AZIMUTH   0 DEG.      MIN. ANGLE=  4 DEG.    OFF AZIMUTH   0 DEG.
  PWR=200.00KW   3 MC/S MAN.NOISE= -148 DBW   REQ.S/N=  0, 10, 20, 30DB
                         OPERATING FREQUENCIES
```

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 17.6 | | | | | | | | | | | | | | |
| | 1 F | 2 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | - | - | - | - | MODE |
| | 72 | 178 | 41 | 42 | 44 | 47 | 50 | 58 | 71 | 71 | - | - | - | - | ANGLE |
| | 50 | 95 | 99 | 99 | 99 | 97 | 93 | 74 | 42 | 13 | - | - | - | - | C.PROB. |
| | 97 | 101 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | 97 | - | - | - | - | DELAY |
| | 169 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | - | - | - | - | NOISE |
| | 253 | 242 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | - | - | - | - | FS.LOSS |
| | 3 | 21 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 2 | - | - | - | - | P. LOSS |
| | 24 | 2 | 16 | 18 | 19 | 20 | 21 | 23 | 24 | 25 | - | - | - | - | S/N..DB |
| | 99 | 63 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | S/N..PROB.A |
| | 98 | 23 | 83 | 90 | 92 | 94 | 95 | 97 | 98 | 98 | - | - | - | - | S/N..PROB.B |
| | 74 | 4 | 37 | 45 | 49 | 54 | 60 | 69 | 76 | 77 | - | - | - | - | S/N..PROB.C |
| | 29 | 0 | 9 | 13 | 16 | 18 | 21 | 26 | 30 | 31 | - | - | - | - | S/N..PROB.D |
| 4 | 28.2 | | | | | | | | | | | | | | |
| | 1 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | - | 1 F | 1 F | MODE |
| | 53 | 149 | 144 | 142 | 142 | 144 | 146 | 155 | 170 | 189 | 189 | - | 46 | 52 | ANGLE |
| | 50 | 99 | 99 | 98 | 97 | 95 | 91 | 79 | 60 | 34 | 11 | - | 59 | 32 | C.PROB. |
| | 96 | 99 | 99 | 98 | 98 | 99 | 99 | 99 | 100 | 102 | 102 | - | 96 | 96 | DELAY |
| | 175 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | - | 174 | 175 | NOISE |
| | 261 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 254 | 256 | 257 | - | 260 | 262 | FS.LOSS |
| | 4 | 53 | 46 | 41 | 36 | 33 | 30 | 25 | 22 | 21 | 19 | - | 5 | 4 | P. LOSS |
| | 24 | -28 | -21 | -16 | -11 | -7 | -4 | 1 | 3 | 6 | 7 | - | 23 | 25 | S/N..DB |
| | 99 | 0 | 1 | 5 | 14 | 24 | 34 | 57 | 71 | 81 | 85 | - | 99 | 99 | S/N..PROB.A |
| | 98 | 0 | 0 | 0 | 2 | 4 | 8 | 20 | 27 | 35 | 39 | - | 97 | 98 | S/N..PROB.B |
| | 73 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 8 | 10 | - | 70 | 77 | S/N..PROB.C |
| | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | - | 27 | 31 | S/N..PROB.D |
| 6 | 29.5 | | | | | | | | | | | | | | |
| | 1 F | - | 2 F | 2 F | 2 F | 2 F | 2 F | 1 F | 2 F | 2 F | 2 F | - | 1 F | 1 F | MODE |
| | 53 | - | 165 | 154 | 148 | 145 | 145 | 44 | 162 | 188 | 188 | - | 42 | 51 | ANGLE |
| | 50 | - | 99 | 99 | 98 | 96 | 93 | 99 | 67 | 45 | 18 | - | 67 | 45 | C.PROB. |
| | 96 | - | 100 | 99 | 99 | 99 | 99 | 96 | 100 | 102 | 102 | - | 96 | 96 | DELAY |
| | 175 | - | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | - | 174 | 175 | NOISE |
| | 262 | - | 243 | 245 | 246 | 248 | 249 | 251 | 254 | 256 | 257 | - | 260 | 262 | FS.LOSS |
| | 6 | - | 67 | 60 | 54 | 48 | 43 | 21 | 30 | 26 | 24 | - | 8 | 6 | P. LOSS |
| | 22 | - | -42 | -35 | -28 | -22 | -17 | 6 | -4 | 0 | 3 | - | 20 | 23 | S/N..DB |
| | 99 | - | 0 | 0 | 0 | 0 | 3 | 82 | 32 | 50 | 68 | - | 99 | 99 | S/N..PROB.A |
| | 97 | - | 0 | 0 | 0 | 0 | 0 | 35 | 6 | 14 | 23 | - | 94 | 97 | S/N..PROB.B |
| | 66 | - | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 3 | - | 54 | 67 | S/N..PROB.C |
| | 22 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 16 | 23 | S/N..PROB.D |
| 8 | 27.8 | | | | | | | | | | | | | | |
| | 1 F | - | - | 2 F | 2 F | 2 F | 2 F | 2 F | 1 F | 2 F | 2 F | - | 1 F | 1 F | MODE |
| | 53 | - | - | 165 | 154 | 149 | 148 | 154 | 42 | 185 | 185 | - | 48 | 50 | ANGLE |
| | 50 | - | - | 99 | 98 | 95 | 91 | 77 | 98 | 23 | 5 | - | 56 | 26 | C.PROB. |
| | 96 | - | - | 100 | 99 | 99 | 99 | 99 | 96 | 102 | 102 | - | 96 | 96 | DELAY |
| | 175 | - | - | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | - | 174 | 175 | NOISE |
| | 261 | - | - | 245 | 246 | 248 | 249 | 251 | 253 | 256 | 257 | - | 260 | 262 | FS.LOSS |
| | 9 | - | - | 67 | 61 | 55 | 49 | 40 | 20 | 29 | 26 | - | 9 | 8 | P. LOSS |
| | 20 | - | - | -42 | -35 | -29 | -23 | -13 | 6 | -2 | 0 | - | 19 | 21 | S/N..DB |
| | 99 | - | - | 0 | 0 | 0 | 0 | 7 | 84 | 37 | 51 | - | 99 | 99 | S/N..PROB.A |
| | 93 | - | - | 0 | 0 | 0 | 0 | 0 | 36 | 8 | 15 | - | 92 | 94 | S/N..PROB.B |
| | 50 | - | - | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 1 | - | 48 | 55 | S/N..PROB.C |
| | 14 | - | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 13 | 17 | S/N..PROB.D |

OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|-----|-----|---|----|----|----|----|----|----|----|----|----|----|----|----|---|
| 10 | 26.6 | | | | | | | | | | | | | | |
| | 1 F | - | 2 F | 2 F | 2 F | 2 F | 2 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | MODE |
| | 67 | - | 180 | 171 | 169 | 169 | 172 | 57 | 47 | 47 | 49 | 54 | 65 | 65 | ANGLE |
| | 50 | - | 99 | 98 | 97 | 93 | 88 | 99 | 97 | 92 | 84 | 71 | 45 | 15 | C.PROB. |
| | 97 | - | 101 | 100 | 100 | 100 | 101 | 97 | 96 | 96 | 96 | 96 | 97 | 97 | DELAY |
| | 174 | - | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 26 | - | 244 | 245 | 247 | 248 | 249 | 251 | 253 | 255 | 256 | 258 | 260 | 262 | FS.LOSS |
| | 8 | - | 69 | 61 | 55 | 49 | 44 | 22 | 18 | 15 | 12 | 10 | 8 | 6 | P. LOSS |
| | 20 | - | -44 | -36 | -29 | -23 | -18 | 5 | 8 | 13 | 15 | 17 | 20 | 22 | S/N..DB |
| | 99 | - | 0 | 0 | 0 | 0 | 2 | 78 | 90 | 97 | 98 | 99 | 99 | 99 | S/N..PROB.A |
| | 93 | - | 0 | 0 | 0 | 0 | 0 | 31 | 44 | 67 | 78 | 85 | 94 | 96 | S/N..PROB.B |
| | 53 | - | 0 | 0 | 0 | 0 | 0 | 6 | 11 | 23 | 30 | 38 | 54 | 61 | S/N..PROB.C |
| | 15 | - | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 6 | 9 | 16 | 20 | S/N..PROB.D |
| 12 | 26.6 | | | | | | | | | | | | | | |
| | 1 F | 2 F | 2 F | 2 F | 2 F | 1 F | 1 F | 2 F | 2 F | 2 F | 1 F | 1 F | 1 F | 1 F | MODE |
| | 61 | 163 | 157 | 155 | 156 | 51 | 44 | 175 | 203 | 203 | 43 | 48 | 60 | 60 | ANGLE |
| | 50 | 99 | 99 | 99 | 98 | 99 | 99 | 73 | 42 | 8 | 87 | 73 | 43 | 8 | C.PROB. |
| | 97 | 100 | 99 | 99 | 99 | 96 | 96 | 101 | 103 | 103 | 96 | 96 | 97 | 97 | DELAY |
| | 174 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 260 | 242 | 243 | 245 | 246 | 247 | 249 | 252 | 254 | 256 | 256 | 258 | 260 | 262 | FS.LOSS |
| | 6 | 61 | 54 | 47 | 42 | 22 | 20 | 29 | 25 | 23 | 9 | 7 | 6 | 5 | P. LOSS |
| | 22 | -37 | -29 | -22 | -17 | 3 | 6 | -2 | 0 | 4 | 19 | 21 | 22 | 24 | S/N..DB |
| | 99 | 0 | 0 | 1 | 4 | 71 | 84 | 39 | 54 | 72 | 99 | 99 | 99 | 99 | S/N..PROB.A |
| | 96 | 0 | 0 | 0 | 0 | 27 | 37 | 11 | 18 | 28 | 91 | 95 | 96 | 98 | S/N..PROB.B |
| | 64 | 0 | 0 | 0 | 0 | 5 | 10 | 1 | 3 | 6 | 47 | 57 | 65 | 72 | S/N..PROB.C |
| | 23 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 14 | 20 | 24 | 28 | S/N..PROB.D |
| 14 | 25.7 | | | | | | | | | | | | | | |
| | 1 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | - | 1 F | 1 F | 1 F | - | MODE |
| | 57 | 141 | 142 | 144 | 148 | 151 | 157 | 173 | 198 | - | 40 | 47 | 57 | - | ANGLE |
| | 50 | 99 | 99 | 99 | 97 | 94 | 89 | 68 | 32 | - | 82 | 66 | 29 | - | C.PROB. |
| | 97 | 98 | 98 | 99 | 99 | 99 | 99 | 101 | 103 | - | 96 | 96 | 96 | - | DELAY |
| | 174 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | - | 172 | 173 | 174 | - | NOISE |
| | 259 | 241 | 243 | 245 | 246 | 248 | 249 | 252 | 254 | - | 256 | 258 | 260 | - | FS.LOSS |
| | 2 | 32 | 28 | 25 | 23 | 21 | 20 | 18 | 17 | - | 4 | 3 | 2 | - | P. LOSS |
| | 26 | -7 | -3 | 0 | 2 | 4 | 5 | 8 | 8 | - | 24 | 25 | 26 | - | S/N..DB |
| | 99 | 23 | 37 | 49 | 66 | 76 | 80 | 89 | 90 | - | 99 | 99 | 99 | - | S/N..PROB.A |
| | 99 | 4 | 9 | 16 | 24 | 30 | 34 | 43 | 45 | - | 98 | 98 | 99 | - | S/N..PROB.B |
| | 81 | 0 | 1 | 2 | 4 | 7 | 8 | 13 | 13 | - | 73 | 78 | 83 | - | S/N..PROB.C |
| | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | - | 28 | 32 | 37 | - | S/N..PROB.D |
| 16 | 21.5 | | | | | | | | | | | | | | |
| | 1 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 1 F | 1 F | 1 F | 1 F | 1 F | - | - | MODE |
| | 65 | 158 | 162 | 167 | 174 | 184 | 200 | 41 | 47 | 55 | 65 | 65 | - | - | ANGLE |
| | 5 | 99 | 99 | 95 | 88 | 76 | 58 | 97 | 87 | 69 | 41 | 14 | - | - | C.PROB. |
| | 97 | 100 | 100 | 100 | 101 | 101 | 103 | 96 | 96 | 96 | 97 | 97 | - | - | DELAY |
| | 171 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 256 | 242 | 243 | 245 | 247 | 248 | 250 | 251 | 253 | 255 | 257 | 258 | - | - | FS.LOSS |
| | 1 | 18 | 16 | 16 | 15 | 15 | 15 | 2 | 2 | 1 | 1 | 1 | - | - | P. LOSS |
| | 25 | 6 | 7 | 8 | 9 | 9 | 9 | 24 | 25 | 26 | 26 | 27 | - | - | S/N..DB |
| | 99 | 82 | 87 | 90 | 92 | 92 | 92 | 99 | 99 | 99 | 99 | 99 | - | - | S/N..PROB.A |
| | 99 | 36 | 41 | 45 | 49 | 49 | 49 | 98 | 99 | 99 | 99 | 99 | - | - | S/N..PROB.B |
| | 80 | 9 | 11 | 13 | 16 | 16 | 16 | 74 | 80 | 81 | 82 | 85 | - | - | S/N..PROB.C |
| | 34 | 1 | 1 | 2 | 2 | 2 | 2 | 29 | 34 | 35 | 35 | 39 | - | - | S/N..PROB.D |

OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 17.6 | | | | | | | | | | | | | | |
| | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | – | – | – | – | MODE |
| | 75 | 43 | 44 | 46 | 48 | 50 | 53 | 62 | 75 | 75 | – | – | – | – | ANGLE |
| | 5○ | 99 | 99 | 99 | 99 | 97 | 93 | 74 | 41 | 10 | – | – | – | – | C.PROB. |
| | 98 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 98 | 98 | – | – | – | – | DELAY |
| | 169 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | – | – | – | – | NOISE |
| | 253 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | – | – | – | – | FS.LOSS |
| | 2 | 6 | 5 | 4 | 4 | 3 | 3 | 2 | 2 | 1 | – | – | – | – | P. LOSS |
| | 25 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | – | – | – | – | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | – | – | – | – | S/N..PROB.A |
| | 98 | 89 | 92 | 94 | 96 | 97 | 97 | 98 | 99 | 99 | – | – | – | – | S/N..PROB.B |
| | 79 | 44 | 48 | 54 | 60 | 66 | 70 | 74 | 80 | 81 | – | – | – | – | S/N..PROB.C |
| | 34 | 15 | 18 | 21 | 23 | 26 | 29 | 31 | 35 | 36 | – | – | – | – | S/N..PROB.D |
| 20 | 15.4 | | | | | | | | | | | | | | |
| | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | – | – | – | – | – | MODE |
| | 84 | 52 | 54 | 56 | 59 | 64 | 69 | 83 | 83 | – | – | – | – | – | ANGLE |
| | 50 | 99 | 98 | 96 | 91 | 83 | 71 | 37 | 8 | – | – | – | – | – | C.PROB. |
| | 98 | 96 | 96 | 96 | 97 | 97 | 97 | 98 | 98 | – | – | – | – | – | DELAY |
| | 167 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | – | – | – | – | – | NOISE |
| | 251 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | – | – | – | – | – | FS.LOSS |
| | 2 | 6 | 5 | 4 | 4 | 3 | 3 | 2 | 2 | – | – | – | – | – | P. LOSS |
| | 23 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 24 | – | – | – | – | – | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | – | – | – | – | – | S/N..PROB.A |
| | 97 | 89 | 92 | 94 | 96 | 97 | 97 | 98 | 98 | – | – | – | – | – | S/N..PROB.B |
| | 71 | 44 | 48 | 54 | 60 | 66 | 70 | 74 | 76 | – | – | – | – | – | S/N..PROB.C |
| | 29 | 15 | 18 | 21 | 23 | 26 | 29 | 31 | 32 | – | – | – | – | – | S/N..PROB.D |
| 22 | 15.0 | | | | | | | | | | | | | | |
| | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | – | – | – | – | – | – | MODE |
| | 89 | 57 | 59 | 62 | 65 | 70 | 77 | 89 | – | – | – | – | – | – | ANGLE |
| | 50 | 99 | 98 | 95 | 89 | 80 | 66 | 29 | – | – | – | – | – | – | C.PROB. |
| | 98 | 96 | 97 | 97 | 97 | 97 | 98 | 98 | – | – | – | – | – | – | DELAY |
| | 167 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | – | – | – | – | – | – | NOISE |
| | 25○ | 241 | 243 | 245 | 246 | 248 | 249 | 251 | – | – | – | – | – | – | FS.LOSS |
| | 2 | 6 | 5 | 4 | 4 | 3 | 3 | 2 | – | – | – | – | – | – | P. LOSS |
| | 23 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | – | – | – | – | – | – | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | – | – | – | – | – | – | S/N..PROB.A |
| | 97 | 89 | 92 | 94 | 96 | 97 | 97 | 98 | – | – | – | – | – | – | S/N..PROB.B |
| | 7○ | 44 | 48 | 54 | 60 | 66 | 70 | 74 | – | – | – | – | – | – | S/N..PROB.C |
| | 28 | 15 | 18 | 21 | 23 | 26 | 29 | 31 | – | – | – | – | – | – | S/N..PROB.D |
| 24 | 14.1 | | | | | | | | | | | | | | |
| | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | – | – | – | – | – | – | MODE |
| | 93 | 61 | 63 | 67 | 72 | 79 | 91 | 93 | – | – | – | – | – | – | ANGLE |
| | 5○ | 99 | 98 | 94 | 85 | 71 | 52 | 14 | – | – | – | – | – | – | C.PROB. |
| | 99 | 97 | 97 | 97 | 97 | 98 | 99 | 99 | – | – | – | – | – | – | DELAY |
| | 166 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | – | – | – | – | – | – | NOISE |
| | 249 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | – | – | – | – | – | – | FS.LOSS |
| | 2 | 6 | 5 | 4 | 3 | 3 | 2 | 2 | – | – | – | – | – | – | P. LOSS |
| | 23 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | – | – | – | – | – | – | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | – | – | – | – | – | – | S/N..PROB.A |
| | 97 | 89 | 92 | 94 | 96 | 97 | 97 | 98 | – | – | – | – | – | – | S/N..PROB.B |
| | 71 | 43 | 48 | 54 | 60 | 66 | 70 | 74 | – | – | – | – | – | – | S/N..PROB.C |
| | 27 | 13 | 15 | 18 | 21 | 24 | 27 | 29 | – | – | – | – | – | – | S/N..PROB.D |

```
      1          SEP           SSN=  110           26.015
TRANSMITTER          RECEIVER           AZIMUTHS        N.MILES
SITE C               RCVR 0             61.0 262.8      1493.7
```

TOTAL RELIABILITY(T.REL.)

REQ. S/N= 0DB(A), 10DB(B), 20DB(C), 30DB(D)

| GMT | A | B | C | D | GMT | A | B | C | D | GMT | A | B | C | D |
|-----|----|----|----|----|-----|----|----|----|----|-----|----|----|----|----|
| 2 | 99 | 99 | 84 | 40 | 10 | 99 | 89 | 49 | 12 | 18 | 99 | 99 | 90 | 51 |
| 4 | 78 | 64 | 43 | 16 | 12 | 99 | 93 | 52 | 17 | 20 | 99 | 99 | 89 | 45 |
| 6 | 95 | 76 | 41 | 11 | 14 | 97 | 91 | 73 | 32 | 22 | 99 | 99 | 88 | 48 |
| 8 | 93 | 70 | 33 | 7 | 16 | 99 | 99 | 90 | 42 | 24 | 99 | 99 | 84 | 41 |

```
              2          SEP              SSN=  110              26.015
        TRANSMITTER           RECEIVER              AZIMUTHS          N.MILES
          SITE C              RCVR 50              61.0  262.8         1493.7
    SIGMA= 1000 SQ. METERS                                          ANT= 25DB
    OFF AZIMUTH   0 DEG.      MIN. ANGLE=  4 DEG.    OFF AZIMUTH   0 DEG.
    PWR=200.00KW  3 MC/S MAN.NOISE= -148 DBW   REQ.S/N=  0, 10, 20, 30DB
                         OPERATING FREQUENCIES
```

| GMT MUF |  9  | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 |          |
|---------|-----|----|----|----|----|----|----|----|----|----|----|----|----|----------|
| 2  18.4 |     |    |    |    |    |    |    |    |    |    |    |    |    |          |
| 1F-     | 1F+ | 1F+| 1F+| 1F+| 1F+| 1F+| 1F-| 1F-| 1F-| 1F-| -  | -  | -  | MODE     |
| 60      | 50  | 51 | 53 | 55 | 58 | 62 | 44 | 56 | 60 | 60 | -  | -  | -  | ANGLE    |
| 50      | 99  | 99 | 99 | 98 | 95 | 88 | 82 | 56 | 24 | 6  | -  | -  | -  | C.PROB.  |
| 97      | 96  | 96 | 96 | 96 | 97 | 97 | 96 | 96 | 97 | 97 | -  | -  | -  | DELAY    |
| 170     | 161 | 162| 163| 164| 165| 166| 168| 169| 171| 172| -  | -  | -  | NOISE    |
| 253     | 241 | 243| 244| 246| 247| 249| 251| 253| 255| 257| -  | -  | -  | FS.LOSS  |
| 3       | 13  | 12 | 11 | 10 | 9  | 9  | 3  | 3  | 2  | 2  | -  | -  | -  | P. LOSS  |
| 25      | 11  | 13 | 14 | 15 | 16 | 17 | 23 | 24 | 25 | 26 | -  | -  | -  | S/N..DB  |
| 99      | 95  | 97 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | -  | -  | -  | S/N..PROB.A |
| 98      | 58  | 70 | 76 | 80 | 84 | 87 | 97 | 98 | 98 | 99 | -  | -  | -  | S/N..PROB.B |
| 77      | 20  | 26 | 30 | 34 | 38 | 41 | 69 | 76 | 77 | 82 | -  | -  | -  | S/N..PROB.C |
| 31      | 3   | 5  | 7  | 8  | 10 | 11 | 26 | 30 | 31 | 35 | -  | -  | -  | S/N..PROB.D |
| 4  29.7 |     |    |    |    |    |    |    |    |    |    |    |    |    |          |
| 1F-     | 2F- | 2F-| 2F-| 1F+| 1F+| 1F+| 2F-| 1F+| 1F+| 1F+| 1F+| 1F+| 1F+| MODE     |
| 41      | 142 | 135| 133| 54 | 45 | 41 | 142| 40 | 42 | 46 | 51 | 63 | 63 | ANGLE    |
| 50      | 99  | 99 | 99 | 99 | 99 | 99 | 83 | 95 | 90 | 82 | 71 | 48 | 19 | C.PROB.  |
| 96      | 98  | 98 | 98 | 96 | 96 | 96 | 98 | 96 | 96 | 96 | 96 | 97 | 97 | DELAY    |
| 175     | 161 | 162| 163| 164| 165| 166| 168| 169| 171| 172| 173| 174| 175| NOISE    |
| 262     | 241 | 243| 245| 246| 247| 249| 251| 253| 255| 256| 258| 260| 262| FS.LOSS  |
| 4       | 54  | 47 | 42 | 25 | 22 | 19 | 26 | 13 | 12 | 11 | 10 | 9  | 9  | P. LOSS  |
| 24      | -29 | -22| -16| 0  | 3  | 6  | 0  | 13 | 16 | 17 | 18 | 18 | 20 | S/N..DB  |
| 99      | 0   | 1  | 5  | 55 | 71 | 84 | 52 | 97 | 99 | 99 | 99 | 99 | 99 | S/N..PROB.A |
| 98      | 0   | 0  | 0  | 18 | 27 | 37 | 17 | 71 | 81 | 85 | 88 | 90 | 93 | S/N..PROB.B |
| 76      | 0   | 0  | 0  | 3  | 5  | 10 | 2  | 27 | 35 | 39 | 43 | 45 | 50 | S/N..PROB.C |
| 31      | 0   | 0  | 0  | 0  | 0  | 1  | 0  | 5  | 8  | 10 | 12 | 13 | 16 | S/N..PROB.D |
| 6  31.1 |     |    |    |    |    |    |    |    |    |    |    |    |    |          |
| 1F-     | -   | 2F+| 2F-| 2F-| 2F-| 2F-| 1F+| 1F+| 1F+| 1F+| 1F+| 1F+| 1F+| MODE     |
| 40      | -   | 171| 149| 140| 137| 135| 53 | 44 | 43 | 45 | 48 | 59 | 63 | ANGLE    |
| 50      | -   | 99 | 99 | 98 | 97 | 94 | 99 | 97 | 93 | 87 | 77 | 58 | 31 | C.PROB.  |
| 96      | -   | 100| 99 | 98 | 98 | 98 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | DELAY    |
| 175     | -   | 162| 163| 164| 165| 166| 168| 169| 171| 172| 173| 174| 175| NOISE    |
| 262     | -   | 244| 245| 246| 248| 249| 251| 253| 255| 256| 258| 260| 262| FS.LOSS  |
| 6       | -   | 76 | 61 | 55 | 49 | 44 | 24 | 20 | 17 | 15 | 14 | 12 | 11 | P. LOSS  |
| 23      | -   | -51| -35| -29| -23| -18| 2  | 6  | 10 | 13 | 14 | 16 | 18 | S/N..DB  |
| 99      | -   | 0  | 0  | 0  | 0  | 2  | 63 | 84 | 93 | 97 | 98 | 99 | 99 | S/N..PROB.A |
| 97      | -   | 0  | 0  | 0  | 0  | 0  | 21 | 36 | 50 | 68 | 73 | 83 | 88 | S/N..PROB.B |
| 67      | -   | 0  | 0  | 0  | 0  | 0  | 3  | 8  | 14 | 23 | 27 | 36 | 41 | S/N..PROB.C |
| 23      | -   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 3  | 4  | 8  | 10 | S/N..PROB.D |
| 8  26.5 |     |    |    |    |    |    |    |    |    |    |    |    |    |          |
| 1F+     | -   | -  | 2F+| 2F-| 2F-| 2F-| 2F-| 1F+| 1F+| 1F+| 1F+| 1F+| 1F+| MODE     |
| 66      | -   | -  | 168| 148| 141| 138| 142| 50 | 46 | 48 | 53 | 63 | 63 | ANGLE    |
| 50      | -   | -  | 99 | 98 | 96 | 93 | 81 | 97 | 92 | 84 | 71 | 44 | 14 | C.PROB.  |
| 97      | -   | -  | 100| 99 | 98 | 98 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | DELAY    |
| 174     | -   | -  | 163| 164| 165| 166| 168| 169| 171| 172| 173| 174| 175| NOISE    |
| 260     | -   | -  | 245| 246| 248| 249| 251| 253| 255| 256| 258| 260| 262| FS.LOSS  |
| 14      | -   | -  | 77 | 62 | 56 | 51 | 41 | 24 | 20 | 17 | 15 | 14 | 12 | P. LOSS  |
| 14      | -   | -  | -52| -36| -30| -24| -14| 3  | 8  | 10 | 12 | 14 | 17 | S/N..DB  |
| 98      | -   | -  | 0  | 0  | 0  | 0  | 6  | 71 | 88 | 93 | 96 | 98 | 99 | S/N..PROB.A |
| 74      | -   | -  | 0  | 0  | 0  | 0  | 0  | 25 | 41 | 51 | 63 | 75 | 84 | S/N..PROB.B |
| 28      | -   | -  | 0  | 0  | 0  | 0  | 0  | 4  | 10 | 15 | 20 | 28 | 37 | S/N..PROB.C |
| 5       | -   | -  | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 1  | 3  | 5  | 8  | S/N..PROB.D |

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|-----|-----|---|----|----|----|----|----|----|----|----|----|----|----|----|---|
| 10 | 27.9 | | | | | | | | | | | | | | |
| | 1F- | 2F+ | 2F- | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | MODE |
| | 55 | 196 | 175 | 165 | 160 | 160 | 162 | 63 | 58 | 58 | 62 | 70 | 50 | 52 | ANGLE |
| | 50 | 99 | 99 | 99 | 97 | 95 | 90 | 98 | 95 | 89 | 78 | 62 | 57 | 27 | C.PROB. |
| | 96 | 102 | 101 | 100 | 100 | 100 | 100 | 97 | 97 | 97 | 97 | 97 | 96 | 96 | DELAY |
| | 175 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 261 | 242 | 244 | 245 | 247 | 248 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | 262 | FS.LOSS |
| | 8 | 88 | 70 | 63 | 56 | 50 | 45 | 26 | 22 | 19 | 17 | 15 | 8 | 7 | P. LOSS |
| | 21 | -64 | -45 | -38 | -30 | -24 | -19 | 0 | 4 | 9 | 11 | 13 | 19 | 22 | S/N..DB |
| | 99 | 0 | 0 | 0 | 0 | 0 | 2 | 52 | 76 | 90 | 95 | 97 | 99 | 99 | S/N..PROB.A |
| | 94 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 29 | 46 | 57 | 68 | 92 | 96 | S/N..PROB.B |
| | 56 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 12 | 17 | 24 | 48 | 61 | S/N..PROB.C |
| | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 13 | 20 | S/N..PROB.D |
| 12 | 27.9 | | | | | | | | | | | | | | |
| | 1F- | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | MODE |
| | 49 | 158 | 149 | 146 | 146 | 60 | 52 | 48 | 48 | 51 | 56 | 64 | 44 | 47 | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 97 | 91 | 80 | 63 | 59 | 22 | C.PROB. |
| | 96 | 99 | 99 | 99 | 99 | 97 | 96 | 96 | 96 | 96 | 96 | 97 | 96 | 96 | DELAY |
| | 175 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 261 | 242 | 243 | 245 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | 262 | FS.LOSS |
| | 5 | 62 | 55 | 48 | 43 | 26 | 24 | 19 | 16 | 14 | 13 | 12 | 6 | 5 | P. LOSS |
| | 23 | -37 | -30 | -23 | -17 | 0 | 2 | 7 | 10 | 13 | 15 | 16 | 22 | 24 | S/N..DB |
| | 99 | 0 | 0 | 1 | 4 | 49 | 65 | 86 | 94 | 97 | 98 | 99 | 99 | 99 | S/N..PROB.A |
| | 97 | 0 | 0 | 0 | 0 | 16 | 24 | 39 | 54 | 67 | 78 | 82 | 96 | 98 | S/N..PROB.B |
| | 67 | 0 | 0 | 0 | 0 | 2 | 4 | 11 | 18 | 25 | 32 | 36 | 65 | 72 | S/N..PROB.C |
| | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 7 | 9 | 24 | 28 | S/N..PROB.D |
| 14 | 27.0 | | | | | | | | | | | | | | |
| | 1F- | 2F- | 2F- | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | MODE |
| | 45 | 131 | 132 | 134 | 137 | 140 | 145 | 40 | 44 | 48 | 54 | 65 | 44 | 44 | ANGLE |
| | 50 | 99 | 99 | 99 | 98 | 96 | 91 | 99 | 95 | 88 | 74 | 55 | 50 | 12 | C.PROB. |
| | 96 | 98 | 98 | 98 | 98 | 98 | 99 | 96 | 96 | 96 | 96 | 97 | 96 | 96 | DELAY |
| | 174 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 263 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 256 | 258 | 260 | 262 | FS.LOSS |
| | 2 | 32 | 28 | 25 | 23 | 21 | 20 | 10 | 9 | 8 | 8 | 8 | 2 | 2 | P. LOSS |
| | 26 | -7 | -3 | 0 | 2 | 4 | 5 | 17 | 18 | 20 | 20 | 20 | 26 | 27 | S/N..DB |
| | 99 | 23 | 37 | 49 | 66 | 76 | 80 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | S/N..PROB.A |
| | 99 | 4 | 9 | 16 | 24 | 30 | 34 | 86 | 90 | 93 | 93 | 93 | 99 | 99 | S/N..PROB.B |
| | 83 | 0 | 1 | 2 | 4 | 7 | 8 | 39 | 45 | 50 | 51 | 51 | 83 | 84 | S/N..PROB.C |
| | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 13 | 16 | 17 | 17 | 37 | 38 | S/N..PROB.D |
| 16 | 22.5 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | - | - | MODE |
| | 54 | 42 | 43 | 44 | 45 | 47 | 48 | 53 | 60 | 72 | 50 | 54 | - | - | ANGLE |
| | 53 | 99 | 99 | 99 | 99 | 99 | 99 | 94 | 81 | 57 | 57 | 28 | - | - | C.PROB. |
| | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | 96 | 96 | - | - | DELAY |
| | 172 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 257 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | 256 | 258 | - | - | FS.LOSS |
| | 1 | 10 | 9 | 8 | 7 | 7 | 7 | 6 | 6 | 7 | 1 | 1 | - | - | P. LOSS |
| | 26 | 15 | 16 | 17 | 18 | 18 | 19 | 20 | 20 | 20 | 26 | 27 | - | - | S/N..DB |
| | 99 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | S/N..PROB.A |
| | 99 | 78 | 83 | 87 | 90 | 90 | 92 | 93 | 94 | 93 | 99 | 99 | - | - | S/N..PROB.B |
| | 83 | 32 | 37 | 41 | 45 | 45 | 49 | 52 | 54 | 50 | 82 | 85 | - | - | S/N..PROB.C |
| | 36 | 7 | 9 | 11 | 14 | 14 | 16 | 17 | 18 | 16 | 35 | 39 | - | - | S/N..PROB.D |

### OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 18.4 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | 1F- | - | - | - | - | MODE |
| | 64 | 53 | 54 | 56 | 59 | 62 | 41 | 48 | 60 | 64 | - | - | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 98 | 95 | 96 | 83 | 56 | 22 | - | - | - | - | C.PROB. |
| | 97 | 96 | 96 | 96 | 97 | 97 | 96 | 96 | 97 | 97 | - | - | - | - | DELAY |
| | 170 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | - | - | - | - | NOISE |
| | 254 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | - | - | - | - | FS.LOSS |
| | 2 | 10 | 9 | 9 | 8 | 8 | 3 | 2 | 2 | 1 | - | - | - | - | P. LOSS |
| | 25 | 14 | 15 | 16 | 17 | 17 | 23 | 24 | 25 | 26 | - | - | - | - | S/N..DB |
| | 99 | 98 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | S/N..PROB.A |
| | 98 | 74 | 79 | 84 | 87 | 87 | 97 | 98 | 99 | 99 | - | - | - | - | S/N..PROB.B |
| | 77 | 31 | 35 | 38 | 42 | 42 | 70 | 74 | 80 | 81 | - | - | - | - | S/N..PROB.C |
| | 33 | 8 | 10 | 12 | 14 | 14 | 29 | 31 | 35 | 36 | - | - | - | - | S/N..PROB.D |
| 20 | 16.1 | | | | | | | | | | | | | | |
| | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | - | - | - | - | - | MODE |
| | 72 | 41 | 43 | 45 | 48 | 51 | 55 | 71 | 72 | - | - | - | - | - | ANGLE |
| | 50 | 99 | 99 | 97 | 94 | 88 | 79 | 52 | 16 | - | - | - | - | - | C.PROB. |
| | 97 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | - | - | - | - | - | DELAY |
| | 168 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | - | - | - | - | - | NOISE |
| | 251 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | - | - | - | - | - | FS.LOSS |
| | 2 | 7 | 5 | 5 | 4 | 3 | 3 | 2 | 2 | - | - | - | - | - | P. LOSS |
| | 24 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | - | - | - | - | - | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | S/N..PROB.A |
| | 98 | 89 | 92 | 94 | 96 | 97 | 97 | 98 | 99 | - | - | - | - | - | S/N..PROB.B |
| | 74 | 44 | 48 | 54 | 60 | 66 | 70 | 74 | 80 | - | - | - | - | - | S/N..PROB.C |
| | 31 | 15 | 18 | 21 | 23 | 26 | 29 | 31 | 35 | - | - | - | - | - | S/N..PROB.D |
| 22 | 15.7 | | | | | | | | | | | | | | |
| | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | - | - | - | - | - | MODE |
| | 78 | 46 | 48 | 50 | 54 | 57 | 62 | 78 | 78 | - | - | - | - | - | ANGLE |
| | 50 | 99 | 99 | 97 | 93 | 85 | 75 | 44 | 11 | - | - | - | - | - | C.PROB. |
| | 98 | 96 | 96 | 96 | 96 | 97 | 97 | 98 | 98 | - | - | - | - | - | DELAY |
| | 168 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | - | - | - | - | - | NOISE |
| | 251 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | - | - | - | - | - | FS.LOSS |
| | 2 | 6 | 5 | 4 | 4 | 3 | 3 | 2 | 2 | - | - | - | - | - | P. LOSS |
| | 24 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | - | - | - | - | - | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | S/N..PROB.A |
| | 98 | 89 | 92 | 94 | 96 | 97 | 97 | 98 | 99 | - | - | - | - | - | S/N..PROB.B |
| | 72 | 44 | 48 | 54 | 60 | 66 | 70 | 74 | 80 | - | - | - | - | - | S/N..PROB.C |
| | 30 | 15 | 18 | 21 | 23 | 26 | 29 | 31 | 35 | - | - | - | - | - | S/N..PROB.D |
| 24 | 14.7 | | | | | | | | | | | | | | |
| | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | - | - | - | - | - | - | - | MODE |
| | 82 | 50 | 52 | 56 | 60 | 65 | 73 | 82 | - | - | - | - | - | - | ANGLE |
| | 50 | 99 | 99 | 96 | 90 | 79 | 63 | 24 | - | - | - | - | - | - | C.PROB. |
| | 98 | 96 | 96 | 96 | 97 | 97 | 97 | 98 | - | - | - | - | - | - | DELAY |
| | 167 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | - | - | - | - | - | - | NOISE |
| | 250 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | - | - | - | - | - | - | FS.LOSS |
| | 2 | 6 | 5 | 4 | 4 | 3 | 3 | 2 | - | - | - | - | - | - | P. LOSS |
| | 24 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | - | - | - | - | - | - | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | - | S/N..PROB.A |
| | 98 | 89 | 92 | 94 | 96 | 97 | 97 | 98 | - | - | - | - | - | - | S/N..PROB.B |
| | 73 | 43 | 48 | 54 | 60 | 66 | 70 | 74 | - | - | - | - | - | - | S/N..PROB.C |
| | 29 | 13 | 15 | 18 | 21 | 24 | 27 | 29 | - | - | - | - | - | - | S/N..PROB.D |

```
     2          SEP            SSN=   110            26.015
TRANSMITTER         RECEIVER           AZIMUTHS         N.MILES
 SITE C             RCVR 50            61.0 262.8        1493.7
```

TOTAL RELIABILITY(T.REL.)

REQ. S/N= 0DB(A), 10DB(B), 20DB(C), 30DB(D)

| GMT | A | B | C | D | | GMT | A | B | C | D | | GMT | A | B | C | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 99 | 99 | 79 | 34 | | 10 | 97 | 74 | 39 | 9 | | 18 | 99 | 99 | 90 | 50 |
| 4 | 99 | 95 | 58 | 20 | | 12 | 99 | 93 | 55 | 20 | | 20 | 99 | 99 | 89 | 49 |
| 6 | 99 | 87 | 41 | 11 | | 14 | 99 | 98 | 81 | 30 | | 22 | 99 | 99 | 90 | 51 |
| 8 | 95 | 71 | 26 | 3 | | 16 | 99 | 99 | 86 | 33 | | 24 | 99 | 99 | 88 | 44 |

```
      3          SEP              SSN=  110              26.015
   TRANSMITTER        RECEIVER              AZIMUTHS          N.MILES
     SITE C           RCVR 100              61.0 262.8        1493.7
  SIGMA= 1000 SQ. METERS                                      ANT= 25DB
  OFF AZIMUTH  0 DEG.      MIN. ANGLE=  4 DEG.     OFF AZIMUTH  0 DEG.
  PWR=200.00KW   3 MC/S MAN.NOISE= -148 DBW   REQ.S/N=  0, 10, 20, 30DB
                      OPERATING FREQUENCIES
```

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 19.4 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | - | - | - | MODE |
| | 48 | 60 | 62 | 64 | 67 | 70 | 75 | 92 | 93 | 48 | 48 | - | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 97 | 92 | 82 | 52 | 17 | 40 | 14 | - | - | - | C.PROB. |
| | 94 | 97 | 97 | 97 | 97 | 97 | 98 | 99 | 99 | 94 | 94 | - | - | - | DELAY |
| | 170 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | - | - | - | NOISE |
| | 254 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 253 | 254 | 256 | - | - | - | FS.LOSS |
| | 1 | 14 | 12 | 11 | 10 | 10 | 10 | 10 | 9 | 1 | 1 | - | - | - | P. LOSS |
| | 26 | 11 | 12 | 13 | 14 | 15 | 16 | 16 | 17 | 27 | 27 | - | - | - | S/N..DB |
| | 99 | 95 | 96 | 97 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | S/N..PROB.A |
| | 99 | 58 | 65 | 71 | 76 | 80 | 84 | 82 | 87 | 99 | 99 | - | - | - | S/N..PROB.B |
| | 83 | 20 | 23 | 27 | 31 | 34 | 37 | 36 | 41 | 85 | 85 | - | - | - | S/N..PROB.C |
| | 37 | 3 | 4 | 5 | 7 | 8 | 10 | 9 | 11 | 38 | 39 | - | - | - | S/N..PROB.D |
| 4 | 25.6 | | | | | | | | | | | | | | |
| | 1F+ | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | MODE |
| | 76 | 136 | 128 | 124 | 60 | 54 | 51 | 50 | 51 | 54 | 59 | 66 | 75 | 75 | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 97 | 94 | 87 | 76 | 63 | 34 | 10 | C.PROB. |
| | 98 | 98 | 97 | 97 | 97 | 96 | 96 | 96 | 96 | 97 | 97 | 98 | 98 | 98 | DELAY |
| | 174 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 259 | 241 | 243 | 245 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | 262 | FS.LOSS |
| | 10 | 44 | 38 | 34 | 24 | 22 | 20 | 16 | 14 | 12 | 11 | 11 | 10 | 9 | P. LOSS |
| | 18 | -18 | -13 | -9 | 0 | 3 | 6 | 10 | 13 | 15 | 16 | 17 | 18 | 20 | S/N..DB |
| | 99 | 3 | 9 | 18 | 55 | 71 | 84 | 93 | 97 | 98 | 99 | 99 | 99 | 99 | S/N..PROB.A |
| | 88 | 0 | 1 | 3 | 18 | 27 | 37 | 52 | 71 | 77 | 82 | 85 | 90 | 93 | S/N..PROB.B |
| | 42 | 0 | 0 | 0 | 3 | 5 | 10 | 17 | 27 | 31 | 35 | 39 | 45 | 50 | S/N..PROB.C |
| | 12 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 5 | 7 | 9 | 10 | 13 | 16 | S/N..PROB.D |
| 6 | 26.9 | | | | | | | | | | | | | | |
| | 1F+ | - | 2F+ | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | MODE |
| | 77 | - | 175 | 145 | 134 | 128 | 126 | 60 | 54 | 54 | 57 | 62 | 75 | 75 | ANGLE |
| | 50 | - | 99 | 99 | 99 | 97 | 96 | 98 | 95 | 91 | 82 | 71 | 49 | 19 | C.PROB. |
| | 98 | - | 101 | 98 | 98 | 97 | 97 | 97 | 96 | 96 | 97 | 97 | 98 | 98 | DELAY |
| | 174 | - | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 260 | - | 244 | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | 262 | FS.LOSS |
| | 13 | - | 75 | 48 | 44 | 40 | 36 | 24 | 20 | 18 | 15 | 14 | 13 | 11 | P. LOSS |
| | 15 | - | -51 | -23 | -18 | -14 | -10 | 2 | 6 | 10 | 12 | 14 | 15 | 17 | S/N..DB |
| | 98 | - | 0 | 0 | 2 | 6 | 14 | 63 | 84 | 93 | 96 | 98 | 98 | 99 | S/N..PROB.A |
| | 79 | - | 0 | 0 | 0 | 0 | 1 | 21 | 36 | 50 | 62 | 73 | 80 | 84 | S/N..PROB.B |
| | 32 | - | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 14 | 20 | 27 | 32 | 37 | S/N..PROB.C |
| | 6 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 6 | 8 | S/N..PROB.D |
| 8 | 25.3 | | | | | | | | | | | | | | |
| | 1F+ | - | - | 2F+ | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | MODE |
| | 78 | - | - | 174 | 143 | 134 | 129 | 129 | 59 | 58 | 61 | 69 | 75 | 75 | ANGLE |
| | 50 | - | - | 98 | 99 | 97 | 95 | 85 | 95 | 89 | 78 | 62 | 29 | 7 | C.PROB. |
| | 98 | - | - | 101 | 98 | 98 | 98 | 97 | 97 | 97 | 97 | 97 | 98 | 98 | DELAY |
| | 173 | - | - | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 259 | - | - | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | 262 | FS.LOSS |
| | 15 | - | - | 76 | 49 | 45 | 41 | 34 | 23 | 20 | 18 | 16 | 14 | 12 | P. LOSS |
| | 12 | - | - | -51 | -24 | -19 | -15 | -7 | 3 | 7 | 10 | 12 | 14 | 16 | S/N..DB |
| | 97 | - | - | 0 | 0 | 2 | 5 | 21 | 71 | 85 | 93 | 96 | 98 | 99 | S/N..PROB.A |
| | 66 | - | - | 0 | 0 | 0 | 0 | 3 | 25 | 37 | 51 | 63 | 75 | 81 | S/N..PROB.B |
| | 22 | - | - | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 15 | 20 | 28 | 33 | S/N..PROB.C |
| | 3 | - | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 7 | S/N..PROB.D |

OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 29.4 | | | | | | | | | | | | | | |
| | 1F- | 2F+ | 2F- | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | MODE |
| | 42 | 203 | 169 | 158 | 152 | 150 | 151 | 71 | 68 | 70 | 76 | 87 | 88 | - | ANGLE |
| | 50 | 99 | 99 | 99 | 98 | 96 | 92 | 98 | 93 | 85 | 71 | 53 | 19 | - | C.PROB. |
| | 93 | 103 | 100 | 99 | 99 | 99 | 99 | 97 | 97 | 97 | 98 | 98 | 98 | - | DELAY |
| | 175 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 261 | 242 | 243 | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | - | FS.LOSS |
| | 4 | 87 | 56 | 50 | 45 | 41 | 37 | 26 | 22 | 19 | 17 | 15 | 14 | - | P.LOSS |
| | 25 | -63 | -31 | -25 | -20 | -15 | -11 | 0 | 4 | 8 | 11 | 12 | 14 | - | S/N..DB |
| | 99 | 0 | 0 | 0 | 1 | 5 | 11 | 52 | 76 | 88 | 95 | 96 | 98 | - | S/N..PROB.A |
| | 98 | 0 | 0 | 0 | 0 | 0 | 1 | 15 | 29 | 41 | 57 | 63 | 75 | - | S/N..PROB.B |
| | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 10 | 17 | 20 | 28 | - | S/N..PROB.C |
| | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 5 | - | S/N..PROB.D |
| 12 | 24.3 | | | | | | | | | | | | | | |
| | 1F+ | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | MODE |
| | 84 | 153 | 143 | 138 | 136 | 66 | 61 | 58 | 60 | 64 | 70 | 82 | 83 | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 95 | 87 | 72 | 53 | 11 | - | C.PROB. |
| | 98 | 99 | 98 | 98 | 98 | 97 | 97 | 97 | 97 | 97 | 97 | 98 | 98 | - | DELAY |
| | 173 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 259 | 241 | 243 | 245 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | - | FS.LOSS |
| | 12 | 50 | 44 | 39 | 35 | 26 | 23 | 19 | 17 | 15 | 13 | 12 | 11 | - | P.LOSS |
| | 15 | -25 | -19 | -14 | -10 | 0 | 2 | 7 | 10 | 13 | 14 | 15 | 16 | - | S/N..DB |
| | 98 | 0 | 3 | 8 | 16 | 49 | 65 | 86 | 94 | 97 | 98 | 98 | 99 | - | S/N..PROB.A |
| | 78 | 0 | 0 | 0 | 2 | 16 | 24 | 39 | 54 | 67 | 73 | 78 | 83 | - | S/N..PROB.B |
| | 32 | 0 | 0 | 0 | 0 | 2 | 4 | 11 | 18 | 25 | 28 | 32 | 37 | - | S/N..PROB.C |
| | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 6 | 7 | 9 | - | S/N..PROB.D |
| 14 | 23.4 | | | | | | | | | | | | | | |
| | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | MODE |
| | 80 | 49 | 47 | 47 | 47 | 48 | 49 | 51 | 55 | 61 | 70 | 80 | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 98 | 93 | 82 | 65 | 39 | - | - | C.PROB. |
| | 98 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | 98 | - | - | DELAY |
| | 172 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 258 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 258 | - | - | FS.LOSS |
| | 9 | 21 | 18 | 16 | 14 | 13 | 12 | 10 | 9 | 9 | 9 | 9 | - | - | P.LOSS |
| | 18 | 3 | 6 | 9 | 11 | 12 | 14 | 16 | 17 | 19 | 19 | 19 | - | - | S/N..DB |
| | 99 | 69 | 83 | 92 | 96 | 97 | 98 | 99 | 99 | 99 | 99 | 99 | - | - | S/N..PROB.A |
| | 90 | 26 | 37 | 49 | 60 | 66 | 75 | 82 | 87 | 90 | 91 | 91 | - | - | S/N..PROB.B |
| | 46 | 5 | 9 | 16 | 21 | 24 | 30 | 36 | 41 | 46 | 47 | 47 | - | - | S/N..PROB.C |
| | 14 | 0 | 1 | 2 | 3 | 4 | 7 | 9 | 11 | 14 | 14 | 15 | - | - | S/N..PROB.D |
| 16 | 23.8 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | - | MODE |
| | 42 | 52 | 53 | 54 | 56 | 57 | 59 | 65 | 74 | 87 | 87 | 42 | 42 | - | ANGLE |
| | 5 | 99 | 99 | 99 | 99 | 99 | 98 | 91 | 72 | 43 | 14 | 46 | 11 | - | C.PROB. |
| | 93 | 96 | 96 | 96 | 96 | 97 | 97 | 97 | 97 | 98 | 98 | 93 | 93 | - | DELAY |
| | 173 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 257 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 257 | 260 | - | FS.LOSS |
| | 1 | 10 | 9 | 9 | 8 | 8 | 7 | 7 | 7 | 8 | 8 | 1 | 0 | - | P.LOSS |
| | 28 | 14 | 15 | 16 | 17 | 18 | 18 | 19 | 19 | 19 | 20 | 28 | 28 | - | S/N..DB |
| | 99 | 98 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | S/N..PROB.A |
| | 99 | 74 | 79 | 84 | 87 | 90 | 90 | 91 | 92 | 90 | 93 | 99 | 99 | - | S/N..PROB.B |
| | 88 | 29 | 33 | 37 | 41 | 45 | 45 | 47 | 49 | 46 | 51 | 88 | 90 | - | S/N..PROB.C |
| | 42 | 6 | 8 | 10 | 12 | 14 | 13 | 15 | 16 | 14 | 17 | 43 | 45 | - | S/N..PROB.D |

OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 19.4 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | - | - | - | MODE |
| | 53 | 63 | 65 | 67 | 70 | 73 | 78 | 94 | 43 | 52 | 52 | - | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 97 | 92 | 83 | 53 | 69 | 38 | 11 | - | - | - | C.PROB. |
| | 94 | 97 | 97 | 97 | 97 | 97 | 98 | 99 | 94 | 94 | 94 | - | - | - | DELAY |
| | 170 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | - | - | - | NOISE |
| | 254 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 252 | 254 | 256 | - | - | - | FS.LOSS |
| | 1 | 11 | 10 | 9 | 9 | 9 | 8 | 9 | 1 | 1 | 1 | - | - | - | P. LOSS |
| | 26 | 14 | 15 | 15 | 16 | 17 | 17 | 17 | 26 | 27 | 27 | - | - | - | S/N..DB |
| | 99 | 98 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | S/N..PROB.A |
| | 99 | 74 | 79 | 80 | 84 | 87 | 87 | 86 | 99 | 99 | 99 | - | - | - | S/N..PROB.B |
| | 83 | 31 | 35 | 35 | 39 | 42 | 42 | 40 | 84 | 85 | 85 | - | - | - | S/N..PROB.C |
| | 38 | 8 | 10 | 10 | 12 | 14 | 14 | 13 | 38 | 39 | 40 | - | - | - | S/N..PROB.D |
| 20 | 16.9 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | 1F- | - | - | - | - | MODE |
| | 61 | 72 | 75 | 79 | 83 | 90 | 42 | 53 | 61 | 61 | - | - | - | - | ANGLE |
| | 50 | 99 | 96 | 92 | 83 | 70 | 85 | 63 | 29 | 6 | - | - | - | - | C.PROB. |
| | 94 | 97 | 98 | 98 | 98 | 99 | 93 | 94 | 94 | 94 | - | - | - | - | DELAY |
| | 169 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | - | - | - | - | NOISE |
| | 252 | 241 | 243 | 245 | 246 | 248 | 248 | 251 | 253 | 254 | - | - | - | - | FS.LOSS |
| | 1 | 11 | 10 | 10 | 9 | 9 | 1 | 1 | 1 | 1 | - | - | - | - | P. LOSS |
| | 26 | 13 | 14 | 15 | 15 | 16 | 25 | 26 | 26 | 27 | - | - | - | - | S/N..DB |
| | 99 | 97 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | S/N..PROB.A |
| | 99 | 69 | 75 | 80 | 80 | 84 | 98 | 99 | 99 | 99 | - | - | - | - | S/N..PROB.B |
| | 81 | 28 | 31 | 35 | 35 | 39 | 80 | 82 | 84 | 85 | - | - | - | - | S/N..PROB.C |
| | 36 | 7 | 8 | 10 | 10 | 12 | 35 | 37 | 38 | 39 | - | - | - | - | S/N..PROB.D |
| 22 | 16.4 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | 1F- | 1F- | - | - | - | - | - | MODE |
| | 67 | 77 | 80 | 84 | 42 | 45 | 49 | 62 | 67 | - | - | - | - | - | ANGLE |
| | 50 | 98 | 96 | 90 | 95 | 90 | 82 | 56 | 21 | - | - | - | - | - | C.PROB. |
| | 95 | 98 | 98 | 98 | 93 | 94 | 94 | 94 | 95 | - | - | - | - | - | DELAY |
| | 168 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | - | - | - | - | - | NOISE |
| | 251 | 241 | 243 | 245 | 245 | 247 | 248 | 251 | 253 | - | - | - | - | - | FS.LOSS |
| | 1 | 11 | 11 | 10 | 2 | 2 | 1 | 1 | 1 | - | - | - | - | - | P. LOSS |
| | 25 | 13 | 14 | 14 | 23 | 24 | 25 | 26 | 26 | - | - | - | - | - | S/N..DB |
| | 99 | 97 | 98 | 98 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | S/N..PROB.A |
| | 98 | 69 | 75 | 76 | 97 | 98 | 98 | 99 | 99 | - | - | - | - | - | S/N..PROB.B |
| | 79 | 28 | 31 | 32 | 71 | 76 | 80 | 82 | 84 | - | - | - | - | - | S/N..PROB.C |
| | 35 | 7 | 8 | 9 | 29 | 32 | 35 | 37 | 38 | - | - | - | - | - | S/N..PROB.D |
| 24 | 15.3 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | - | - | - | - | - | MODE |
| | 71 | 82 | 41 | 44 | 47 | 52 | 57 | 70 | 70 | - | - | - | - | - | ANGLE |
| | 50 | 99 | 99 | 98 | 94 | 86 | 73 | 37 | 8 | - | - | - | - | - | C.PROB. |
| | 95 | 98 | 93 | 94 | 94 | 94 | 94 | 95 | 95 | - | - | - | - | - | DELAY |
| | 167 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | - | - | - | - | - | NOISE |
| | 250 | 241 | 242 | 244 | 245 | 247 | 248 | 251 | 253 | - | - | - | - | - | FS.LOSS |
| | 1 | 11 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | - | - | - | - | - | P. LOSS |
| | 25 | 13 | 22 | 23 | 23 | 24 | 25 | 26 | 26 | - | - | - | - | - | S/N..DB |
| | 99 | 97 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | S/N..PROB.A |
| | 99 | 69 | 96 | 97 | 97 | 98 | 98 | 99 | 99 | - | - | - | - | - | S/N..PROB.B |
| | 80 | 26 | 65 | 71 | 71 | 76 | 80 | 82 | 84 | - | - | - | - | - | S/N..PROB.C |
| | 34 | 5 | 23 | 27 | 27 | 30 | 34 | 36 | 37 | - | - | - | - | - | S/N..PROB.D |

```
        3           SEP           SSN=  110              26.015
TRANSMITTER         RECEIVER              AZIMUTHS        N.MILES
  SITE C            RCVR 100            61.0 262.8        1493.7
```

TOTAL RELIABILITY(T.REL.)

REQ. S/N= 0DB(A), 10DB(B), 20DB(C), 30DB(D)

| GMT | A | B | C | D | GMT | A | B | C | D | GMT | A | B | C | D |
|-----|----|----|----|----|-----|----|----|----|----|-----|----|----|----|----|
| 2 | 99 | 98 | 55 | 22 | 10 | 95 | 64 | 40 | 16 | 18 | 99 | 99 | 78 | 40 |
| 4 | 99 | 93 | 55 | 16 | 12 | 99 | 86 | 43 | 9 | 20 | 99 | 98 | 85 | 44 |
| 6 | 99 | 82 | 35 | 5 | 14 | 99 | 99 | 70 | 24 | 22 | 99 | 99 | 93 | 49 |
| 8 | 93 | 65 | 21 | 2 | 16 | 99 | 99 | 81 | 32 | 24 | 99 | 99 | 93 | 49 |

```
        4            SEP          SSN=   110              26.015
     TRANSMITTER        RECEIVER              AZIMUTHS         N.MILES
      SITE C            RCVR 150             61.0 262.8        1493.7
   SIGMA= 1000 SQ. METERS                                    ANT= 25DB
   OFF AZIMUTH   0 DEG.      MIN. ANGLE=  4 DEG.     OFF AZIMUTH   0 DEG.
   PWR=200.00KW   3 MC/S MAN.NOISE= -148 DBW   REQ.S/N=  0, 10, 20, 30DB
                        OPERATING FREQUENCIES
```

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 15.5 | | | | | | | | | | | | | | |
| | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | - | - | - | MODE |
| | 104 | 70 | 72 | 75 | 78 | 82 | 88 | 104 | 104 | - | - | - | - | - | ANGLE |
| | 50 | 99 | 99 | 98 | 95 | 87 | 75 | 40 | 10 | - | - | - | - | - | C.PROB. |
| | 100 | 97 | 97 | 98 | 98 | 98 | 98 | 100 | 100 | - | - | - | - | - | DELAY |
| | 167 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | - | - | - | - | - | NOISE |
| | 251 | 241 | 243 | 245 | 246 | 248 | 249 | 252 | 254 | - | - | - | - | - | FS.LOSS |
| | 10 | 14 | 13 | 12 | 11 | 10 | 10 | 10 | 10 | - | - | - | - | - | P. LOSS |
| | 15 | 10 | 12 | 13 | 14 | 15 | 15 | 16 | 16 | - | - | - | - | - | S/N..DB |
| | 99 | 93 | 96 | 97 | 98 | 99 | 98 | 99 | 99 | - | - | - | - | - | S/N..PROB.A |
| | 81 | 52 | 65 | 71 | 76 | 80 | 80 | 82 | 84 | - | - | - | - | - | S/N..PROB.B |
| | 34 | 17 | 23 | 27 | 31 | 34 | 34 | 36 | 37 | - | - | - | - | - | S/N..PROB.C |
| | 8 | 2 | 4 | 5 | 7 | 8 | 8 | 9 | 10 | - | - | - | - | - | S/N..PROB.D |
| 4 | 24.5 | | | | | | | | | | | | | | |
| | 1F+ | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | MODE |
| | 87 | 131 | 121 | 75 | 67 | 62 | 61 | 60 | 62 | 66 | 72 | 83 | 86 | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 91 | 83 | 70 | 54 | 22 | - | C.PROB. |
| | 98 | 98 | 97 | 98 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 98 | 98 | - | DELAY |
| | 173 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 259 | 241 | 243 | 245 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | - | FS.LOSS |
| | 11 | 44 | 39 | 27 | 24 | 22 | 20 | 16 | 14 | 13 | 12 | 11 | 10 | - | P. LOSS |
| | 16 | -19 | -14 | -2 | 0 | 3 | 6 | 10 | 12 | 15 | 16 | 16 | 17 | - | S/N..DB |
| | 99 | 2 | 8 | 41 | 55 | 71 | 84 | 93 | 97 | 98 | 99 | 99 | 99 | - | S/N..PROB.A |
| | 83 | 0 | 0 | 11 | 18 | 27 | 37 | 52 | 66 | 77 | 82 | 82 | 87 | - | S/N..PROB.B |
| | 36 | 0 | 0 | 1 | 3 | 5 | 10 | 17 | 24 | 31 | 35 | 36 | 41 | - | S/N..PROB.C |
| | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 7 | 9 | 9 | 11 | - | S/N..PROB.D |
| 6 | 25.7 | | | | | | | | | | | | | | |
| | 1F+ | 2F+ | 2F+ | 2F+ | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | MODE |
| | 89 | 192 | 181 | 175 | 128 | 121 | 117 | 67 | 64 | 66 | 70 | 77 | 87 | 87 | ANGLE |
| | 50 | 99 | 99 | 98 | 99 | 98 | 97 | 97 | 94 | 87 | 77 | 64 | 36 | 11 | C.PROB. |
| | 98 | 102 | 101 | 101 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 98 | 98 | 98 | DELAY |
| | 174 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 260 | 242 | 244 | 245 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | 262 | FS.LOSS |
| | 14 | 83 | 75 | 67 | 45 | 41 | 37 | 24 | 20 | 18 | 16 | 14 | 13 | 12 | P. LOSS |
| | 14 | -59 | -50 | -42 | -19 | -15 | -10 | 2 | 6 | 10 | 12 | 13 | 14 | 17 | S/N..DB |
| | 98 | 0 | 0 | 0 | 2 | 5 | 14 | 63 | 84 | 93 | 96 | 97 | 98 | 99 | S/N..PROB.A |
| | 72 | 0 | 0 | 0 | 0 | 0 | 1 | 21 | 36 | 50 | 62 | 68 | 75 | 84 | S/N..PROB.B |
| | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 14 | 20 | 24 | 28 | 37 | S/N..PROB.C |
| | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 3 | 5 | 8 | | S/N..PROB.D |
| 8 | 24.2 | | | | | | | | | | | | | | |
| | 1F+ | - | 2F+ | 2F+ | 2F+ | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | MODE |
| | 89 | - | 191 | 180 | 176 | 128 | 121 | 76 | 69 | 70 | 75 | 87 | 87 | - | ANGLE |
| | 50 | - | 99 | 98 | 95 | 98 | 96 | 98 | 93 | 85 | 70 | 52 | 18 | - | C.PROB. |
| | 98 | - | 102 | 101 | 101 | 97 | 97 | 98 | 97 | 97 | 98 | 98 | 98 | - | DELAY |
| | 173 | - | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 259 | - | 244 | 245 | 247 | 248 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | - | FS.LOSS |
| | 16 | - | 83 | 75 | 68 | 46 | 42 | 27 | 23 | 20 | 18 | 16 | 14 | - | P. LOSS |
| | 11 | - | -59 | -51 | -43 | -20 | -15 | -0 | 3 | 7 | 10 | 11 | 13 | - | S/N..DB |
| | 95 | - | 0 | 0 | 0 | 1 | 5 | 47 | 71 | 85 | 93 | 95 | 97 | - | S/N..PROB.A |
| | 58 | - | 0 | 0 | 0 | 0 | 0 | 13 | 25 | 37 | 51 | 57 | 70 | - | S/N..PROB.B |
| | 18 | - | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 8 | 15 | 17 | 25 | - | S/N..PROB.C |
| | 2 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | - | S/N..PROB.D |

OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 23.3 | | | | | | | | | | | | | | |
| | 1F+ | 2F+ | 2F+ | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | MODE |
| | 101 | 207 | 198 | 153 | 145 | 141 | 89 | 79 | 78 | 82 | 90 | 99 | 99 | - | ANGLE |
| | 50 | 99 | 99 | 99 | 98 | 97 | 99 | 97 | 91 | 80 | 63 | 41 | 10 | - | C.PROB. |
| | 99 | 103 | 103 | 99 | 98 | 98 | 98 | 98 | 98 | 98 | 99 | 99 | 99 | - | DELAY |
| | 172 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 258 | 242 | 244 | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 257 | 259 | 261 | - | FS.LOSS |
| | 16 | 86 | 77 | 51 | 46 | 42 | 31 | 26 | 22 | 19 | 17 | 16 | 14 | - | P. LOSS |
| | 16 | -62 | -53 | -26 | -21 | -16 | -4 | 0 | 4 | 8 | 10 | 12 | 13 | - | S/N..DB |
| | 94 | 0 | 0 | 0 | 1 | 4 | 32 | 52 | 76 | 88 | 93 | 96 | 97 | - | S/N..PROB.A |
| | 55 | 0 | 0 | 0 | 0 | 0 | 6 | 15 | 29 | 41 | 51 | 63 | 70 | - | S/N..PROB.B |
| | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 10 | 15 | 20 | 25 | - | S/N..PROB.C |
| | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 4 | - | S/N..PROB.D |
| 12 | 23.3 | | | | | | | | | | | | | | |
| | 1F+ | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | MODE |
| | 95 | 150 | 136 | 129 | 81 | 73 | 70 | 69 | 71 | 76 | 85 | 94 | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 98 | 93 | 82 | 64 | 37 | - | - | C.PROB. |
| | 99 | 99 | 98 | 98 | 98 | 97 | 97 | 97 | 97 | 98 | 98 | 99 | - | - | DELAY |
| | 172 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 258 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 257 | 258 | - | - | FS.LOSS |
| | 13 | 50 | 45 | 40 | 29 | 26 | 23 | 19 | 17 | 15 | 14 | 13 | - | - | P. LOSS |
| | 13 | -25 | -20 | -15 | -3 | 0 | 2 | 7 | 9 | 12 | 14 | 15 | - | - | S/N..DB |
| | 98 | 0 | 2 | 7 | 38 | 49 | 65 | 86 | 92 | 96 | 98 | 98 | - | - | S/N..PROB.A |
| | 71 | 0 | 0 | 0 | 10 | 16 | 24 | 39 | 49 | 62 | 73 | 78 | - | - | S/N..PROB.B |
| | 27 | 0 | 0 | 0 | 1 | 2 | 4 | 11 | 16 | 22 | 28 | 32 | - | - | S/N..PROB.C |
| | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 6 | 7 | - | - | S/N..PROB.D |
| 14 | 22.4 | | | | | | | | | | | | | | |
| | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | MODE |
| | 91 | 58 | 57 | 57 | 57 | 58 | 59 | 63 | 67 | 74 | 87 | 91 | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 97 | 90 | 75 | 55 | 22 | - | - | C.PROB. |
| | 99 | 97 | 97 | 96 | 97 | 97 | 97 | 97 | 97 | 98 | 98 | 99 | - | - | DELAY |
| | 172 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 257 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 258 | - | - | FS.LOSS |
| | 1? | 21 | 18 | 16 | 15 | 13 | 12 | 11 | 10 | 9 | 9 | 9 | - | - | P. LOSS |
| | 18 | 3 | 6 | 8 | 10 | 12 | 13 | 16 | 16 | 18 | 18 | 18 | - | - | S/N..DB |
| | 99 | 69 | 83 | 90 | 94 | 97 | 97 | 99 | 99 | 99 | 99 | 99 | - | - | S/N..PROB.A |
| | 89 | 26 | 37 | 45 | 55 | 66 | 70 | 82 | 84 | 88 | 88 | 88 | - | - | S/N..PROB.B |
| | 44 | 5 | 9 | 13 | 18 | 24 | 27 | 36 | 37 | 42 | 43 | 43 | - | - | S/N..PROB.C |
| | 13 | 0 | 1 | 2 | 3 | 4 | 5 | 9 | 10 | 12 | 12 | 12 | - | - | S/N..PROB.D |
| 16 | 18.9 | | | | | | | | | | | | | | |
| | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | - | MODE |
| | 98 | 62 | 63 | 64 | 66 | 68 | 71 | 77 | 89 | 98 | 98 | - | - | - | ANGLE |
| | 5? | 99 | 99 | 99 | 99 | 99 | 97 | 86 | 63 | 29 | 6 | - | - | - | C.PROB. |
| | 99 | 97 | 97 | 97 | 97 | 97 | 97 | 98 | 98 | 99 | 99 | - | - | - | DELAY |
| | 17? | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | - | - | - | NOISE |
| | 254 | 241 | 243 | 245 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | - | - | - | FS.LOSS |
| | 9 | 11 | 10 | 9 | 9 | 8 | 8 | 8 | 8 | 8 | 8 | - | - | - | P. LOSS |
| | 18 | 14 | 15 | 16 | 16 | 17 | 17 | 18 | 18 | 19 | 19 | - | - | - | S/N..DB |
| | 99 | 98 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | S/N..PROB.A |
| | 89 | 74 | 79 | 84 | 84 | 87 | 87 | 89 | 90 | 90 | 91 | - | - | - | S/N..PROB.B |
| | 43 | 29 | 33 | 37 | 38 | 41 | 41 | 43 | 45 | 46 | 47 | - | - | - | S/N..PROB.C |
| | 13 | 6 | 8 | 10 | 10 | 12 | 11 | 13 | 13 | 14 | 14 | - | - | - | S/N..PROB.D |

OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 20.4 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | 1F- | 1F- | - | - | MODE |
| | 40 | 73 | 75 | 78 | 81 | 85 | 91 | 107 | 107 | - | 40 | 40 | - | - | ANGLE |
| | 5? | 99 | 99 | 98 | 95 | 88 | 76 | 40 | 7 | - | 24 | 5 | - | - | C.PROB. |
| | 93 | 97 | 98 | 98 | 98 | 98 | 99 | 100 | 100 | - | 93 | 93 | - | - | DELAY |
| | 171 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | - | 172 | 173 | - | - | NOISE |
| | 255 | 241 | 243 | 245 | 246 | 248 | 249 | 252 | 254 | - | 256 | 257 | - | - | FS.LOSS |
| | 1 | 11 | 10 | 10 | 9 | 9 | 9 | 9 | 9 | - | 1 | 1 | - | - | P. LOSS |
| | 27 | 13 | 14 | 15 | 15 | 16 | 16 | 16 | 17 | - | 28 | 28 | - | - | S/N..DB |
| | 99 | 97 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | - | 99 | 99 | - | - | S/N..PROB.A |
| | 99 | 69 | 75 | 80 | 80 | 84 | 84 | 82 | 87 | - | 99 | 99 | - | - | S/N..PROB.B |
| | 86 | 28 | 31 | 35 | 35 | 39 | 38 | 37 | 42 | - | 88 | 88 | - | - | S/N..PROB.C |
| | 40 | 7 | 8 | 10 | 10 | 12 | 12 | 11 | 14 | - | 43 | 44 | - | - | S/N..PROB.D |
| 20 | 17.8 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | - | - | - | - | MODE |
| | 49 | 83 | 86 | 90 | 95 | 104 | 115 | 115 | 49 | 49 | - | - | - | - | ANGLE |
| | 50 | 98 | 95 | 89 | 78 | 62 | 43 | 8 | 45 | 14 | - | - | - | - | C.PROB. |
| | 94 | 98 | 98 | 99 | 99 | 99 | 100 | 100 | 94 | 94 | - | - | - | - | DELAY |
| | 169 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | - | - | - | - | NOISE |
| | 252 | 241 | 243 | 245 | 246 | 248 | 249 | 252 | 253 | 254 | - | - | - | - | FS.LOSS |
| | 1 | 11 | 11 | 10 | 10 | 10 | 10 | 10 | 1 | 1 | - | - | - | - | P. LOSS |
| | 26 | 13 | 13 | 14 | 14 | 15 | 15 | 16 | 26 | 27 | - | - | - | - | S/N..DB |
| | 99 | 97 | 97 | 98 | 98 | 99 | 98 | 99 | 99 | 99 | - | - | - | - | S/N..PROB.A |
| | 99 | 69 | 70 | 76 | 76 | 80 | 80 | 82 | 99 | 99 | - | - | - | - | S/N..PROB.B |
| | 83 | 28 | 28 | 32 | 32 | 35 | 35 | 37 | 84 | 85 | - | - | - | - | S/N..PROB.C |
| | 38 | 7 | 7 | 9 | 9 | 10 | 10 | 11 | 38 | 39 | - | - | - | - | S/N..PROB.D |
| 22 | 17.3 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | - | - | - | - | MODE |
| | 55 | 88 | 91 | 96 | 102 | 112 | 120 | 45 | 55 | 55 | - | - | - | - | ANGLE |
| | 50 | 98 | 94 | 87 | 74 | 58 | 36 | 67 | 36 | 9 | - | - | - | - | C.PROB. |
| | 94 | 98 | 99 | 99 | 99 | 100 | 101 | 94 | 94 | 94 | - | - | - | - | DELAY |
| | 169 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | - | - | - | - | NOISE |
| | 252 | 241 | 243 | 245 | 246 | 248 | 249 | 250 | 253 | 254 | - | - | - | - | FS.LOSS |
| | 1 | 12 | 11 | 10 | 10 | 10 | 10 | 1 | 1 | 1 | - | - | - | - | P. LOSS |
| | 26 | 12 | 13 | 14 | 14 | 14 | 14 | 26 | 26 | 27 | - | - | - | - | S/N..DB |
| | 99 | 96 | 97 | 98 | 98 | 98 | 98 | 99 | 99 | 99 | - | - | - | - | S/N..PROB.A |
| | 99 | 63 | 70 | 76 | 76 | 76 | 75 | 99 | 99 | 99 | - | - | - | - | S/N..PROB.B |
| | 82 | 25 | 28 | 32 | 32 | 32 | 32 | 82 | 84 | 85 | - | - | - | - | S/N..PROB.C |
| | 37 | 6 | 7 | 9 | 9 | 9 | 9 | 37 | 38 | 39 | - | - | - | - | S/N..PROB.D |
| 24 | 16.1 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | - | - | - | - | - | MODE |
| | 59 | 92 | 97 | 103 | 113 | 124 | 43 | 58 | 59 | - | - | - | - | - | ANGLE |
| | 5? | 98 | 93 | 82 | 64 | 40 | 82 | 52 | 17 | - | - | - | - | - | C.PROB. |
| | 94 | 99 | 99 | 99 | 100 | 101 | 94 | 94 | 94 | - | - | - | - | - | DELAY |
| | 168 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | - | - | - | - | - | NOISE |
| | 251 | 241 | 243 | 245 | 247 | 248 | 248 | 251 | 253 | - | - | - | - | - | FS.LOSS |
| | 1 | 12 | 11 | 11 | 11 | 11 | 1 | 1 | 1 | - | - | - | - | - | P. LOSS |
| | 26 | 12 | 13 | 13 | 14 | 14 | 25 | 26 | 26 | - | - | - | - | - | S/N..DB |
| | 99 | 96 | 97 | 97 | 98 | 98 | 99 | 99 | 99 | - | - | - | - | - | S/N..PROB.A |
| | 99 | 63 | 70 | 71 | 76 | 76 | 98 | 99 | 99 | - | - | - | - | - | S/N..PROB.B |
| | 82 | 23 | 26 | 27 | 31 | 30 | 80 | 82 | 84 | - | - | - | - | - | S/N..PROB.C |
| | 36 | 4 | 5 | 5 | 7 | 7 | 34 | 36 | 37 | - | - | - | - | - | S/N..PROB.D |

```
     4          SEP          SSN=   110              26.015
TRANSMITTER        RECEIVER              AZIMUTHS         N.MILES
SITE C             RCVR 150              61.0 262.8       1493.7
```

TOTAL RELIABILITY(T.REL.)

REQ. S/N= 0DB(A), 10DB(B), 20DB(C), 30DB(D)

| GMT | A | B | C | D | GMT | A | B | C | D | GMT | A | B | C | D |
|-----|---|---|---|---|-----|---|---|---|---|-----|---|---|---|---|
| 2 | 99 | 97 | 57 | 15 | 10 | 91 | 59 | 16 | 1 | 18 | 99 | 99 | 70 | 28 |
| 4 | 99 | 91 | 51 | 13 | 12 | 99 | 79 | 36 | 6 | 20 | 99 | 90 | 56 | 24 |
| 6 | 98 | 76 | 30 | 3 | 14 | 99 | 99 | 67 | 21 | 22 | 99 | 90 | 71 | 34 |
| 8 | 93 | 59 | 18 | 1 | 16 | 99 | 99 | 77 | 29 | 24 | 99 | 96 | 79 | 37 |

```
      1           DEC           SSN=   110              26.015
   TRANSMITTER          RECEIVER          AZIMUTHS       N.MILES
   SITE C               RCVR 0            61.0 262.8      1493.7
SIGMA= 1000 SQ. METERS                                  ANT= 25DB
OFF AZIMUTH     0 DEG.      MIN. ANGLE=   4 DEG.    OFF AZIMUTH    0 DEG.
PWR=200.00KW    3 MC/S MAN.NOISE= -148 DBW    REQ.S/N=   0, 10, 20, 30DB
                        OPERATING FREQUENCIES
```

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|-----|-----|---|----|----|----|----|----|----|----|----|----|----|----|----|---|
| 2 | 10.4 | | | | | | | | | | | | | | |
| | 1 F | 1 F | 1 F | 1 F | 1 F | - | - | - | - | - | - | - | - | - | MODE |
| | 75 | 58 | 68 | 75 | 75 | - | - | - | - | - | - | - | - | - | ANGLE |
| | 50 | 82 | 61 | 31 | 8 | - | - | - | - | - | - | - | - | - | C.PROB. |
| | 98 | 97 | 97 | 98 | 98 | - | - | - | - | - | - | - | - | - | DELAY |
| | 163 | 161 | 162 | 163 | 164 | - | - | - | - | - | - | - | - | - | NOISE |
| | 244 | 241 | 243 | 245 | 246 | - | - | - | - | - | - | - | - | - | FS.LOSS |
| | 4 | 6 | 5 | 4 | 3 | - | - | - | - | - | - | - | - | - | P. LOSS |
| | 21 | 18 | 20 | 21 | 21 | - | - | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | - | - | - | - | S/N..PROB.A |
| | 95 | 89 | 94 | 95 | 96 | - | - | - | - | - | - | - | - | - | S/N..PROB.B |
| | 56 | 43 | 53 | 60 | 60 | - | - | - | - | - | - | - | - | - | S/N..PROB.C |
| | 19 | 13 | 18 | 21 | 21 | - | - | - | - | - | - | - | - | - | S/N..PROB.D |
| 4 | 21.2 | | | | | | | | | | | | | | |
| | 1 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | - | 1 F | 1 F | 1 F | - | - | MODE |
| | 55 | 145 | 148 | 152 | 158 | 167 | 182 | 193 | - | 46 | 54 | 54 | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 95 | 83 | 60 | 13 | - | 72 | 36 | 10 | - | - | C.PROB. |
| | 96 | 99 | 99 | 99 | 100 | 100 | 101 | 102 | - | 96 | 96 | 96 | - | - | DELAY |
| | 171 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | - | 171 | 172 | 173 | - | - | NOISE |
| | 256 | 241 | 243 | 245 | 247 | 248 | 250 | 252 | - | 255 | 256 | 258 | - | - | FS.LOSS |
| | 2 | 24 | 21 | 20 | 18 | 17 | 17 | 16 | - | 3 | 2 | 2 | - | - | P. LOSS |
| | 25 | 0 | 3 | 5 | 6 | 7 | 8 | 9 | - | 25 | 25 | 26 | - | - | S/N..DB |
| | 99 | 52 | 70 | 80 | 84 | 87 | 90 | 91 | - | 99 | 99 | 99 | - | - | S/N..PROB.A |
| | 99 | 17 | 26 | 34 | 38 | 41 | 45 | 47 | - | 98 | 98 | 99 | - | - | S/N..PROB.B |
| | 80 | 2 | 5 | 8 | 10 | 12 | 13 | 15 | - | 77 | 78 | 82 | - | - | S/N..PROB.C |
| | 34 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | - | 31 | 32 | 36 | - | - | S/N..PROB.D |
| 6 | 32.2 | | | | | | | | | | | | | | |
| | 1 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | - | - | MODE |
| | 47 | 143 | 137 | 134 | 133 | 133 | 134 | 138 | 145 | 155 | 181 | 179 | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 80 | 47 | 17 | - | - | C.PROB. |
| | 96 | 99 | 98 | 98 | 98 | 98 | 98 | 98 | 99 | 99 | 101 | 101 | - | - | DELAY |
| | 173 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 263 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 257 | 259 | - | - | FS.LOSS |
| | 3 | 47 | 41 | 36 | 33 | 30 | 27 | 23 | 20 | 19 | 18 | 17 | - | - | P. LOSS |
| | 23 | -22 | -16 | -11 | -7 | -4 | -1 | 3 | 5 | 8 | 9 | 10 | - | - | S/N..DB |
| | 99 | 0 | 4 | 11 | 22 | 33 | 44 | 69 | 80 | 88 | 91 | 93 | - | - | S/N..PROB.A |
| | 97 | 0 | 0 | 1 | 3 | 6 | 11 | 24 | 32 | 41 | 46 | 51 | - | - | S/N..PROB.B |
| | 68 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 6 | 10 | 12 | 15 | - | - | S/N..PROB.C |
| | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | - | - | S/N..PROB.D |
| 8 | 31.8 | | | | | | | | | | | | | | |
| | 1 F | 2 F | 2 F | 2 F | 2 F | 2 F | 1 F | 2 F | 2 F | 2 F | 2 F | - | - | 1 F | MODE |
| | 52 | 159 | 148 | 143 | 141 | 140 | 43 | 146 | 154 | 170 | 186 | - | - | 47 | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 70 | 21 | - | - | 66 | C.PROB. |
| | 96 | 100 | 99 | 98 | 98 | 98 | 96 | 99 | 99 | 100 | 102 | - | - | 96 | DELAY |
| | 175 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | - | - | 175 | NOISE |
| | 262 | 242 | 243 | 245 | 246 | 248 | 249 | 251 | 254 | 256 | 257 | - | - | 262 | FS.LOSS |
| | 4 | 56 | 50 | 44 | 39 | 35 | 18 | 27 | 24 | 21 | 20 | - | - | 4 | P. LOSS |
| | 25 | -31 | -24 | -19 | -14 | -9 | 8 | -0 | 2 | 5 | 7 | - | - | 25 | S/N..DB |
| | 99 | 0 | 0 | 2 | 6 | 16 | 90 | 47 | 66 | 77 | 85 | - | - | 99 | S/N..PROB.A |
| | 98 | 0 | 0 | 0 | 0 | 2 | 44 | 13 | 22 | 30 | 38 | - | - | 98 | S/N..PROB.B |
| | 77 | 0 | 0 | 0 | 0 | 0 | 11 | 1 | 3 | 5 | 8 | - | - | 77 | S/N..PROB.C |
| | 29 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | - | - | 29 | S/N..PROB.D |

OPERATING FREQUENCIES

**GMT 10   MUF 29.1**

| MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | - | - | 1 F | 1 F | MODE |
| 53 | 147 | 142 | 140 | 140 | 141 | 143 | 151 | 164 | 188 | - | - | 43 | 51 | ANGLE |
| 50 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 84 | 37 | - | - | 82 | 32 | C.PROB. |
| 96 | 99 | 98 | 98 | 98 | 98 | 99 | 99 | 100 | 102 | - | - | 96 | 96 | DELAY |
| 175 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | - | - | 174 | 175 | NOISE |
| 261 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 254 | 256 | - | - | 260 | 262 | FS.LOSS |
| 4 | 52 | 46 | 40 | 36 | 32 | 29 | 25 | 22 | 20 | - | - | 5 | 4 | P. LOSS |
| 24 | -27 | -20 | -15 | -10 | -6 | -3 | 1 | 4 | 6 | - | - | 23 | 25 | S/N..DB |
| 99 | 0 | 1 | 5 | 14 | 25 | 36 | 57 | 76 | 81 | - | - | 99 | 99 | S/N..PROB.A |
| 98 | 0 | 0 | 0 | 1 | 4 | 8 | 18 | 29 | 34 | - | - | 97 | 98 | S/N..PROB.B |
| 75 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 7 | - | - | 70 | 77 | S/N..PROB.C |
| 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | 25 | 29 | S/N..PROB.D |

**GMT 12   MUF 27.4**

| MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | - | - | 1 F | 1 F | MODE |
| 53 | 133 | 134 | 136 | 138 | 141 | 145 | 155 | 176 | 190 | - | - | 50 | 52 | ANGLE |
| 50 | 99 | 99 | 99 | 99 | 99 | 99 | 91 | 62 | 13 | - | - | 56 | 9 | C.PROB. |
| 96 | 98 | 98 | 98 | 98 | 98 | 99 | 99 | 101 | 102 | - | - | 96 | 96 | DELAY |
| 174 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | - | - | 174 | 175 | NOISE |
| 260 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 254 | 256 | - | - | 260 | 262 | FS.LOSS |
| 2 | 33 | 29 | 26 | 23 | 22 | 20 | 18 | 17 | 16 | - | - | 2 | 2 | P. LOSS |
| 25 | -8 | -4 | 0 | 1 | 3 | 5 | 8 | 9 | 10 | - | - | 25 | 27 | S/N..DB |
| 99 | 20 | 33 | 49 | 60 | 71 | 80 | 89 | 92 | 93 | - | - | 99 | 99 | S/N..PROB.A |
| 99 | 3 | 8 | 16 | 21 | 27 | 34 | 43 | 49 | 50 | - | - | 98 | 99 | S/N..PROB.B |
| 80 | 0 | 0 | 2 | 3 | 5 | 8 | 13 | 16 | 16 | - | - | 80 | 84 | S/N..PROB.C |
| 34 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | - | - | 33 | 38 | S/N..PROB.D |

**GMT 14   MUF 20.6**

| MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 F | 2 F | 2 F | 2 F | 2 F | 2 F | 2 F | - | 1 F | 1 F | 1 F | - | - | - | MODE |
| 56 | 145 | 149 | 155 | 162 | 174 | 196 | - | 41 | 51 | 56 | - | - | - | ANGLE |
| 50 | 99 | 99 | 98 | 91 | 74 | 47 | - | 89 | 61 | 16 | - | - | - | C.PROB. |
| 96 | 99 | 99 | 99 | 100 | 101 | 102 | - | 96 | 96 | 96 | - | - | - | DELAY |
| 171 | 161 | 162 | 163 | 164 | 165 | 166 | - | 169 | 171 | 172 | - | - | - | NOISE |
| 255 | 241 | 243 | 245 | 247 | 248 | 250 | - | 253 | 255 | 257 | - | - | - | FS.LOSS |
| 1 | 17 | 16 | 15 | 15 | 15 | 15 | - | 2 | 1 | 1 | - | - | - | P. LOSS |
| 26 | 7 | 8 | 9 | 9 | 10 | 10 | - | 25 | 26 | 26 | - | - | - | S/N..DB |
| 99 | 86 | 89 | 92 | 92 | 94 | 94 | - | 99 | 99 | 99 | - | - | - | S/N..PROB.A |
| 99 | 39 | 44 | 49 | 49 | 54 | 54 | - | 99 | 99 | 99 | - | - | - | S/N..PROB.B |
| 82 | 11 | 13 | 16 | 16 | 18 | 18 | - | 80 | 81 | 82 | - | - | - | S/N..PROB.C |
| 36 | 1 | 1 | 2 | 2 | 3 | 3 | - | 34 | 35 | 35 | - | - | - | S/N..PROB.D |

**GMT 16   MUF 13.3**

| MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 F | 2 F | 1 F | 1 F | 1 F | 1 F | 1 F | - | - | - | - | - | - | - | MODE |
| 63 | 209 | 41 | 45 | 50 | 59 | 63 | - | - | - | - | - | - | - | ANGLE |
| 50 | 49 | 99 | 96 | 84 | 60 | 32 | - | - | - | - | - | - | - | C.PROB. |
| 97 | 104 | 96 | 96 | 96 | 97 | 97 | - | - | - | - | - | - | - | DELAY |
| 166 | 161 | 162 | 163 | 164 | 165 | 166 | - | - | - | - | - | - | - | NOISE |
| 248 | 242 | 243 | 244 | 246 | 247 | 249 | - | - | - | - | - | - | - | FS.LOSS |
| 3 | 18 | 5 | 4 | 4 | 3 | 3 | - | - | - | - | - | - | - | P. LOSS |
| 23 | 5 | 19 | 20 | 21 | 22 | 23 | - | - | - | - | - | - | - | S/N..DB |
| 99 | 78 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | - | - | S/N..PROB.A |
| 97 | 32 | 92 | 94 | 96 | 97 | 97 | - | - | - | - | - | - | - | S/N..PROB.B |
| 67 | 7 | 48 | 54 | 60 | 66 | 70 | - | - | - | - | - | - | - | S/N..PROB.C |
| 25 | 0 | 15 | 18 | 21 | 24 | 27 | - | - | - | - | - | - | - | S/N..PROB.D |

OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|-----|-----|---|----|----|----|----|----|----|----|----|----|----|----|----|---|
| 18 | 9.9 | | | | | | | | | | | | | | |
| | 1 F | 1 F | 1 F | 1 F | - | - | - | - | - | - | - | - | - | - | MODE |
| | 76 | 63 | 75 | 75 | - | - | - | - | - | - | - | - | - | - | ANGLE |
| | 50 | 81 | 46 | 15 | - | - | - | - | - | - | - | - | - | - | C.PROB. |
| | 98 | 97 | 98 | 98 | - | - | - | - | - | - | - | - | - | - | DELAY |
| | 162 | 161 | 162 | 163 | - | - | - | - | - | - | - | - | - | - | NOISE |
| | 243 | 241 | 243 | 245 | - | - | - | - | - | - | - | - | - | - | FS.LOSS |
| | 5 | 6 | 5 | 4 | - | - | - | - | - | - | - | - | - | - | P. LOSS |
| | 20 | 18 | 20 | 21 | - | - | - | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 99 | 99 | 99 | - | - | - | - | - | - | - | - | - | - | S/N..PROB.A |
| | 93 | 89 | 94 | 95 | - | - | - | - | - | - | - | - | - | - | S/N..PROB.B |
| | 52 | 44 | 53 | 60 | - | - | - | - | - | - | - | - | - | - | S/N..PROB.C |
| | 20 | 15 | 20 | 23 | - | - | - | - | - | - | - | - | - | - | S/N..PROB.D |
| 20 | 9.9 | | | | | | | | | | | | | | |
| | 1 F | 1 F | 1 F | 1 F | - | - | - | - | - | - | - | - | - | - | MODE |
| | 85 | 71 | 84 | 84 | - | - | - | - | - | - | - | - | - | - | ANGLE |
| | 50 | 80 | 47 | 18 | - | - | - | - | - | - | - | - | - | - | C.PROB. |
| | 98 | 97 | 98 | 98 | - | - | - | - | - | - | - | - | - | - | DELAY |
| | 162 | 161 | 162 | 163 | - | - | - | - | - | - | - | - | - | - | NOISE |
| | 243 | 241 | 243 | 245 | - | - | - | - | - | - | - | - | - | - | FS.LOSS |
| | 5 | 6 | 5 | 4 | - | - | - | - | - | - | - | - | - | - | P. LOSS |
| | 20 | 19 | 20 | 21 | - | - | - | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 99 | 99 | 99 | - | - | - | - | - | - | - | - | - | - | S/N..PROB.A |
| | 94 | 91 | 94 | 95 | - | - | - | - | - | - | - | - | - | - | S/N..PROB.B |
| | 53 | 47 | 53 | 60 | - | - | - | - | - | - | - | - | - | - | S/N..PROB.C |
| | 20 | 17 | 20 | 23 | - | - | - | - | - | - | - | - | - | - | S/N..PROB.D |
| 22 | 11.2 | | | | | | | | | | | | | | |
| | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | - | - | - | - | - | - | - | - | MODE |
| | 85 | 63 | 69 | 81 | 85 | 85 | - | - | - | - | - | - | - | - | ANGLE |
| | 50 | 96 | 84 | 56 | 27 | 8 | - | - | - | - | - | - | - | - | C.PROB. |
| | 98 | 97 | 97 | 98 | 98 | 98 | - | - | - | - | - | - | - | - | DELAY |
| | 164 | 161 | 162 | 163 | 164 | 165 | - | - | - | - | - | - | - | - | NOISE |
| | 245 | 241 | 243 | 245 | 246 | 248 | - | - | - | - | - | - | - | - | FS.LOSS |
| | 4 | 6 | 5 | 4 | 3 | 3 | - | - | - | - | - | - | - | - | P. LOSS |
| | 22 | 18 | 20 | 21 | 21 | 22 | - | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | - | - | - | S/N..PROB.A |
| | 96 | 89 | 94 | 95 | 96 | 97 | - | - | - | - | - | - | - | - | S/N..PROB.B |
| | 61 | 44 | 53 | 60 | 60 | 66 | - | - | - | - | - | - | - | - | S/N..PROB.C |
| | 24 | 15 | 20 | 23 | 23 | 26 | - | - | - | - | - | - | - | - | S/N..PROB.D |
| 24 | 11.6 | | | | | | | | | | | | | | |
| | 1 F | 1 F | 1 F | 1 F | 1 F | 1 F | - | - | - | - | - | - | - | - | MODE |
| | 81 | 57 | 63 | 71 | 80 | 80 | - | - | - | - | - | - | - | - | ANGLE |
| | 50 | 93 | 82 | 63 | 37 | 13 | - | - | - | - | - | - | - | - | C.PROB. |
| | 98 | 97 | 97 | 97 | 98 | 98 | - | - | - | - | - | - | - | - | DELAY |
| | 164 | 161 | 162 | 163 | 164 | 165 | - | - | - | - | - | - | - | - | NOISE |
| | 246 | 241 | 243 | 245 | 246 | 248 | - | - | - | - | - | - | - | - | FS.LOSS |
| | 4 | 6 | 5 | 4 | 3 | 3 | - | - | - | - | - | - | - | - | P. LOSS |
| | 21 | 18 | 19 | 20 | 21 | 22 | - | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | - | - | - | S/N..PROB.A |
| | 95 | 89 | 92 | 94 | 96 | 97 | - | - | - | - | - | - | - | - | S/N..PROB.B |
| | 58 | 43 | 48 | 54 | 60 | 66 | - | - | - | - | - | - | - | - | S/N..PROB.C |
| | 20 | 13 | 15 | 18 | 21 | 24 | - | - | - | - | - | - | - | - | S/N..PROB.D |

<pre>
         1        DEC              SSN=   110              26.015
  TRANSMITTER        RECEIVER            AZIMUTHS          N.MILES
   SITE C            RCVR 0              61.0 262.8         1493.7
                  TOTAL  RELIABILITY(T.REL.)

          REQ. S/N= 0DB(A),  10DB(B),  20DB(C),  30DB(D)

  GMT   A  B  C  D      GMT   A  B  C  D      GMT   A  B  C  D

   2   88 82 48 12      10   94 85 60 20      18   84 76 42 15

   4   98 84 64 26      12   98 74 52 20      20   84 79 45 18


   6   94 54 34 12      14   99 96 80 36      22   99 94 54 22

   8   97 81 57 20      16   99 99 72 30      24   98 94 62 20
</pre>

60

```
        2         DEC          SSN=   110              26.015
   TRANSMITTER        RECEIVER         AZIMUTHS       N.MILES
     SITE C           RCVR 50          61.0 262.8       1493.7
  SIGMA= 1000 SQ. METERS                              ANT= 25DB
  OFF AZIMUTH   0 DEG.    MIN. ANGLE=  4 DEG.    OFF AZIMUTH   0 DEG.
PWR=200.00KW  3 MC/S MAN.NOISE= -148 DBW   REQ.S/N=  0, 10, 20, 30DB
                        OPERATING FREQUENCIES
```

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 10.9 | | | | | | | | | | | | | | |
| | 1F- | 1F- | 1F- | 1F- | 1F- | - | - | - | - | - | - | - | - | - | MODE |
| | 64 | 45 | 52 | 63 | 63 | - | - | - | - | - | - | - | - | - | ANGLE |
| | 5 | 88 | 72 | 48 | 19 | - | - | - | - | - | - | - | - | - | C.PROB. |
| | 97 | 96 | 96 | 97 | 97 | - | - | - | - | - | - | - | - | - | DELAY |
| | 163 | 161 | 162 | 163 | 164 | - | - | - | - | - | - | - | - | - | NOISE |
| | 244 | 241 | 243 | 245 | 246 | - | - | - | - | - | - | - | - | - | FS.LOSS |
| | 4 | 6 | 5 | 4 | 4 | - | - | - | - | - | - | - | - | - | P. LOSS |
| | 20 | 18 | 19 | 20 | 21 | - | - | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | - | - | - | - | S/N..PROB.A |
| | 94 | 89 | 92 | 94 | 96 | - | - | - | - | - | - | - | - | - | S/N..PROB.B |
| | 54 | 43 | 48 | 54 | 60 | - | - | - | - | - | - | - | - | - | S/N..PROB.C |
| | 18 | 13 | 15 | 18 | 21 | - | - | - | - | - | - | - | - | - | S/N..PROB.D |
| 4 | 22.4 | | | | | | | | | | | | | | |
| | 1F- | 2F- | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | - | - | MODE |
| | 43 | 134 | 137 | 141 | 146 | 153 | 41 | 46 | 52 | 64 | 40 | 42 | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 97 | 89 | 99 | 98 | 86 | 54 | 57 | 24 | - | - | C.PROB. |
| | 96 | 98 | 98 | 98 | 99 | 99 | 96 | 96 | 96 | 97 | 96 | 96 | - | - | DELAY |
| | 172 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 257 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 256 | 258 | - | - | FS.LOSS |
| | 2 | 24 | 21 | 20 | 18 | 17 | 9 | 8 | 7 | 7 | 2 | 2 | - | - | P. LOSS |
| | 25 | 0 | 3 | 5 | 6 | 8 | 17 | 19 | 19 | 20 | 25 | 26 | - | - | S/N..DB |
| | 99 | 52 | 70 | 80 | 84 | 90 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | S/N..PROB.A |
| | 98 | 17 | 26 | 34 | 38 | 45 | 87 | 91 | 92 | 93 | 98 | 99 | - | - | S/N..PROB.B |
| | 78 | 2 | 5 | 8 | 10 | 14 | 41 | 47 | 49 | 50 | 78 | 82 | - | - | S/N..PROB.C |
| | 33 | 0 | 0 | 0 | 1 | 2 | 11 | 15 | 16 | 16 | 32 | 36 | - | - | S/N..PROB.D |
| 6 | 30.6 | | | | | | | | | | | | | | |
| | 1F+ | 2F- | 2F- | 2F- | 1F+ | 1F+ | 2F- | 2F- | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | MODE |
| | 59 | 138 | 129 | 125 | 50 | 42 | 124 | 127 | 132 | 141 | 157 | 168 | 45 | 56 | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 98 | 87 | 61 | 27 | 88 | 58 | C.PROB. |
| | 97 | 98 | 98 | 97 | 96 | 96 | 97 | 97 | 98 | 98 | 99 | 100 | 96 | 96 | DELAY |
| | 175 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 262 | 241 | 243 | 245 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 259 | 260 | 262 | FS.LOSS |
| | 8 | 47 | 42 | 37 | 21 | 19 | 27 | 23 | 20 | 19 | 17 | 17 | 8 | 8 | P. LOSS |
| | 21 | -22 | -17 | -12 | 4 | 6 | -1 | 3 | 6 | 9 | 10 | 10 | 20 | 21 | S/N..DB |
| | 99 | 0 | 3 | 9 | 76 | 84 | 44 | 69 | 84 | 90 | 93 | 93 | 99 | 99 | S/N..PROB.A |
| | 94 | 0 | 0 | 0 | 29 | 36 | 11 | 24 | 36 | 46 | 51 | 51 | 94 | 94 | S/N..PROB.B |
| | 55 | 0 | 0 | 0 | 5 | 8 | 1 | 4 | 8 | 12 | 15 | 15 | 54 | 55 | S/N..PROB.C |
| | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 16 | 17 | S/N..PROB.D |
| 8 | 29.5 | | | | | | | | | | | | | | |
| | 1F+ | 2F- | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | MODE |
| | 63 | 155 | 142 | 135 | 132 | 131 | 49 | 40 | 141 | 153 | 41 | 44 | 52 | 62 | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 98 | 82 | 99 | 99 | 86 | 40 | C.PROB. |
| | 97 | 99 | 98 | 98 | 98 | 98 | 96 | 96 | 98 | 99 | 96 | 96 | 96 | 97 | DELAY |
| | 175 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 262 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 256 | 258 | 260 | 262 | FS.LOSS |
| | 9 | 56 | 50 | 45 | 40 | 36 | 21 | 17 | 24 | 21 | 11 | 10 | 9 | 9 | P. LOSS |
| | 19 | -31 | -25 | -19 | -14 | -10 | 4 | 9 | 2 | 6 | 17 | 18 | 19 | 20 | S/N..DB |
| | 99 | 0 | 0 | 2 | 6 | 14 | 75 | 91 | 66 | 81 | 99 | 99 | 99 | 99 | S/N..PROB.A |
| | 92 | 0 | 0 | 0 | 0 | 1 | 29 | 47 | 22 | 34 | 85 | 88 | 92 | 93 | S/N..PROB.B |
| | 49 | 0 | 0 | 0 | 0 | 0 | 5 | 13 | 3 | 7 | 38 | 42 | 48 | 50 | S/N..PROB.C |
| | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 8 | 10 | 13 | 14 | S/N..PROB.D |

OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 30.6 | | | | | | | | | | | | | | |
| | 1F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | MODE |
| | 40 | 141 | 134 | 131 | 53 | 45 | 40 | 139 | 149 | 41 | 44 | 48 | 60 | 63 | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 92 | 99 | 99 | 95 | 62 | 11 | C.PROB. |
| | 96 | 98 | 98 | 98 | 96 | 96 | 96 | 98 | 99 | 96 | 96 | 96 | 97 | 97 | DELAY |
| | 175 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 262 | 241 | 243 | 245 | 246 | 247 | 249 | 251 | 253 | 255 | 256 | 258 | 260 | 262 | FS.LOSS |
| | 4 | 53 | 47 | 41 | 24 | 21 | 19 | 25 | 22 | 11 | 10 | 10 | 9 | 8 | P. LOSS |
| | 25 | -28 | -21 | -16 | 1 | 4 | 7 | 1 | 4 | 16 | 17 | 18 | 19 | 20 | S/N..DB |
| | 99 | 0 | 1 | 4 | 60 | 76 | 87 | 57 | 76 | 99 | 99 | 99 | 99 | 99 | S/N..PROB.A |
| | 98 | 0 | 0 | 0 | 19 | 29 | 40 | 18 | 29 | 81 | 85 | 88 | 92 | 93 | S/N..PROB.B |
| | 77 | 0 | 0 | 0 | 2 | 5 | 9 | 2 | 5 | 34 | 38 | 42 | 48 | 50 | S/N..PROB.C |
| | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 8 | 10 | 13 | 14 | S/N..PROB.D |
| 12 | 28.9 | | | | | | | | | | | | | | |
| | 1F- | 2F- | 2F- | 2F- | 2F- | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | - | MODE |
| | 40 | 124 | 124 | 126 | 127 | 130 | 133 | 142 | 158 | 41 | 46 | 52 | 64 | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 95 | 73 | 99 | 94 | 79 | 32 | - | C.PROB. |
| | 96 | 97 | 97 | 97 | 98 | 98 | 98 | 98 | 99 | 96 | 96 | 96 | 97 | - | DELAY |
| | 175 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 261 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 254 | 255 | 256 | 258 | 260 | - | FS.LOSS |
| | 2 | 33 | 29 | 26 | 24 | 22 | 20 | 18 | 17 | 8 | 7 | 7 | 7 | - | P. LOSS |
| | 26 | -8 | -4 | -1 | 1 | 3 | 5 | 8 | 9 | 20 | 20 | 21 | 20 | - | S/N..DB |
| | 99 | 20 | 33 | 45 | 60 | 71 | 80 | 89 | 92 | 99 | 99 | 99 | 99 | - | S/N..PROB.A |
| | 99 | 3 | 8 | 13 | 21 | 27 | 34 | 43 | 49 | 93 | 93 | 95 | 94 | - | S/N..PROB.B |
| | 83 | 0 | 0 | 2 | 3 | 5 | 8 | 13 | 16 | 50 | 51 | 57 | 54 | - | S/N..PROB.C |
| | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 16 | 17 | 20 | 18 | - | S/N..PROB.D |
| 14 | 21.7 | | | | | | | | | | | | | | |
| | 1F- | 2F- | 2F- | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | - | - | MODE |
| | 44 | 134 | 138 | 143 | 149 | 159 | 42 | 47 | 55 | 67 | 44 | 44 | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 95 | 82 | 99 | 96 | 79 | 38 | 41 | 6 | - | - | C.PROB. |
| | 96 | 98 | 98 | 98 | 99 | 100 | 96 | 96 | 96 | 97 | 96 | 96 | - | - | DELAY |
| | 172 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 256 | 241 | 243 | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 256 | 258 | - | - | FS.LOSS |
| | 1 | 17 | 16 | 15 | 15 | 14 | 6 | 6 | 6 | 7 | 1 | 1 | - | - | P. LOSS |
| | 27 | 7 | 8 | 9 | 10 | 10 | 19 | 20 | 20 | 21 | 26 | 27 | - | - | S/N..DB |
| | 99 | 86 | 89 | 92 | 94 | 94 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | S/N..PROB.A |
| | 99 | 39 | 44 | 49 | 55 | 54 | 92 | 93 | 94 | 94 | 99 | 99 | - | - | S/N..PROB.B |
| | 85 | 11 | 13 | 16 | 18 | 18 | 49 | 52 | 54 | 56 | 82 | 85 | - | - | S/N..PROB.C |
| | 38 | 1 | 1 | 2 | 3 | 3 | 16 | 17 | 18 | 19 | 35 | 39 | - | - | S/N..PROB.D |
| 16 | 14.0 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | - | - | - | - | - | - | MODE |
| | 52 | 49 | 53 | 58 | 65 | 42 | 52 | 52 | - | - | - | - | - | - | ANGLE |
| | 50 | 99 | 98 | 91 | 71 | 77 | 51 | 10 | - | - | - | - | - | - | C.PROB. |
| | 96 | 96 | 96 | 97 | 97 | 96 | 96 | 96 | - | - | - | - | - | - | DELAY |
| | 166 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | - | - | - | - | - | - | NOISE |
| | 249 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | - | - | - | - | - | - | FS.LOSS |
| | 3 | 10 | 9 | 9 | 9 | 3 | 3 | 2 | - | - | - | - | - | - | P. LOSS |
| | 23 | 14 | 15 | 16 | 16 | 22 | 23 | 24 | - | - | - | - | - | - | S/N..DB |
| | 99 | 98 | 98 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | - | S/N..PROB.A |
| | 97 | 74 | 79 | 84 | 84 | 97 | 97 | 98 | - | - | - | - | - | - | S/N..PROB.B |
| | 71 | 29 | 33 | 37 | 38 | 66 | 70 | 74 | - | - | - | - | - | - | S/N..PROB.C |
| | 27 | 6 | 8 | 10 | 10 | 24 | 27 | 29 | - | - | - | - | - | - | S/N..PROB.D |

### OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 10.4 | | | | | | | | | | | | | | |
| | 1F- | 1F- | 1F- | 1F- | 1F- | - | - | - | - | - | - | - | - | - | MODE |
| | 65 | 49 | 59 | 64 | 64 | - | - | - | - | - | - | - | - | - | ANGLE |
| | 50 | 90 | 63 | 28 | 7 | - | - | - | - | - | - | - | - | - | C.PROB. |
| | 97 | 96 | 97 | 97 | 97 | - | - | - | - | - | - | - | - | - | DELAY |
| | 163 | 161 | 162 | 163 | 164 | - | - | - | - | - | - | - | - | - | NOISE |
| | 244 | 241 | 243 | 245 | 246 | - | - | - | - | - | - | - | - | - | FS.LOSS |
| | 5 | 6 | 5 | 4 | 4 | - | - | - | - | - | - | - | - | - | P. LOSS |
| | 20 | 18 | 19 | 20 | 21 | - | - | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | - | - | - | - | S/N..PROB.A |
| | 93 | 89 | 92 | 94 | 96 | - | - | - | - | - | - | - | - | - | S/N..PROB.B |
| | 50 | 44 | 48 | 54 | 60 | - | - | - | - | - | - | - | - | - | S/N..PROB.C |
| | 19 | 15 | 18 | 21 | 23 | - | - | - | - | - | - | - | - | - | S/N..PROB.D |
| 20 | 10.4 | | | | | | | | | | | | | | |
| | 1F- | 1F- | 1F- | 1F- | 1F- | - | - | - | - | - | - | - | - | - | MODE |
| | 74 | 57 | 67 | 73 | 73 | - | - | - | - | - | - | - | - | - | ANGLE |
| | 50 | 89 | 63 | 30 | 9 | - | - | - | - | - | - | - | - | - | C.PROB. |
| | 97 | 97 | 97 | 97 | 97 | - | - | - | - | - | - | - | - | - | DELAY |
| | 163 | 161 | 162 | 163 | 164 | - | - | - | - | - | - | - | - | - | NOISE |
| | 244 | 241 | 243 | 245 | 246 | - | - | - | - | - | - | - | - | - | FS.LOSS |
| | 4 | 6 | 5 | 4 | 3 | - | - | - | - | - | - | - | - | - | P. LOSS |
| | 21 | 18 | 20 | 20 | 21 | - | - | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | - | - | - | - | S/N..PROB.A |
| | 94 | 89 | 94 | 94 | 96 | - | - | - | - | - | - | - | - | - | S/N..PROB.B |
| | 56 | 44 | 53 | 54 | 60 | - | - | - | - | - | - | - | - | - | S/N..PROB.C |
| | 21 | 15 | 20 | 21 | 23 | - | - | - | - | - | - | - | - | - | S/N..PROB.D |
| 22 | 11.7 | | | | | | | | | | | | | | |
| | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | - | - | - | - | - | - | - | - | MODE |
| | 74 | 51 | 56 | 64 | 74 | 74 | - | - | - | - | - | - | - | - | ANGLE |
| | 50 | 98 | 91 | 71 | 41 | 17 | - | - | - | - | - | - | - | - | C.PROB. |
| | 98 | 96 | 96 | 97 | 97 | 97 | - | - | - | - | - | - | - | - | DELAY |
| | 164 | 161 | 162 | 163 | 164 | 165 | - | - | - | - | - | - | - | - | NOISE |
| | 246 | 241 | 243 | 245 | 246 | 248 | - | - | - | - | - | - | - | - | FS.LOSS |
| | 4 | 6 | 5 | 4 | 3 | 3 | - | - | - | - | - | - | - | - | P. LOSS |
| | 21 | 18 | 19 | 20 | 21 | 22 | - | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | - | - | - | S/N..PROB.A |
| | 95 | 89 | 92 | 94 | 96 | 97 | - | - | - | - | - | - | - | - | S/N..PROB.B |
| | 59 | 44 | 48 | 54 | 60 | 66 | - | - | - | - | - | - | - | - | S/N..PROB.C |
| | 22 | 15 | 18 | 21 | 23 | 26 | - | - | - | - | - | - | - | - | S/N..PROB.D |
| 24 | 12.1 | | | | | | | | | | | | | | |
| | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | 1F- | - | - | - | - | - | - | - | MODE |
| | 70 | 46 | 50 | 56 | 67 | 69 | 69 | - | - | - | - | - | - | - | ANGLE |
| | 50 | 96 | 88 | 74 | 53 | 26 | 8 | - | - | - | - | - | - | - | C.PROB. |
| | 97 | 96 | 96 | 96 | 97 | 97 | 97 | - | - | - | - | - | - | - | DELAY |
| | 164 | 161 | 162 | 163 | 164 | 165 | 166 | - | - | - | - | - | - | - | NOISE |
| | 246 | 241 | 243 | 244 | 246 | 248 | 249 | - | - | - | - | - | - | - | FS.LOSS |
| | | 6 | 5 | 4 | 4 | 3 | 3 | - | - | - | - | - | - | - | P. LOSS |
| | 22 | 18 | 19 | 20 | 21 | 22 | 23 | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | - | - | S/N..PROB.A |
| | 96 | 89 | 92 | 94 | 96 | 97 | 97 | - | - | - | - | - | - | - | S/N..PROB.B |
| | 61 | 43 | 48 | 54 | 60 | 66 | 70 | - | - | - | - | - | - | - | S/N..PROB.C |
| | 21 | 13 | 15 | 18 | 21 | 24 | 27 | - | - | - | - | - | - | - | S/N..PROB.D |

```
      2           DEC          SSN=  110              26.015
TRANSMITTER        RECEIVER              AZIMUTHS        N.MILES
SITE C             RCVR 50               61.0 262.8      1493.7
```

## TOTAL RELIABILITY (T.REL.)

REQ. S/N= 0DB(A), 10DB(B), 20DB(C), 30DB(D)

| GMT | A | B | C | D | GMT | A | B | C | D | GMT | A | B | C | D |
|-----|---|---|---|---|-----|---|---|---|---|-----|---|---|---|---|
| 2 | 94 | 89 | 55 | 20 | 10 | 99 | 97 | 63 | 18 | 18 | 93 | 86 | 49 | 19 |
| 4 | 99 | 98 | 74 | 30 | 12 | 99 | 99 | 76 | 30 | 20 | 92 | 86 | 49 | 19 |
| 6 | 98 | 90 | 53 | 15 | 14 | 99 | 99 | 73 | 32 | 22 | 99 | 97 | 58 | 24 |
| 8 | 99 | 97 | 60 | 20 | 16 | 99 | 95 | 71 | 29 | 24 | 99 | 96 | 62 | 24 |

```
        3          DEC              SSN=  110            26.015
    TRANSMITTER         RECEIVER            AZIMUTHS       N.MILES
      SITE C             RCVR 100          61.0 262.8      1493.7
   SIGMA= 1000 SQ. METERS                                 ANT= 25DB
   OFF AZIMUTH   0 DEG.     MIN. ANGLE=  4 DEG.   OFF AZIMUTH   0 DEG.
 PWR=200.00KW   3 MC/S MAN.NOISE= -148 DBW   REQ.S/N=  0, 10, 20, 30DB
                     OPERATING FREQUENCIES
```

**GMT 2   MUF 11.5**

| MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F- | 1F+ | 1F+ | 1F- | 1F- | 1F- | - | - | - | - | - | - | - | - | MODE |
| 53 | 86 | 96 | 46 | 52 | 52 | - | - | - | - | - | - | - | - | ANGLE |
| 50 | 66 | 34 | 61 | 34 | 11 | - | - | - | - | - | - | - | - | C.PROB. |
| 94 | 98 | 99 | 94 | 94 | 94 | - | - | - | - | - | - | - | - | DELAY |
| 164 | 161 | 162 | 163 | 164 | 165 | - | - | - | - | - | - | - | - | NOISE |
| 245 | 241 | 243 | 244 | 246 | 247 | - | - | - | - | - | - | - | - | FS.LOSS |
| 2 | 12 | 11 | 2 | 2 | 2 | - | - | - | - | - | - | - | - | P. LOSS |
| 24 | 13 | 13 | 23 | 23 | 24 | - | - | - | - | - | - | - | - | S/N..DB |
| 99 | 97 | 97 | 99 | 99 | 99 | - | - | - | - | - | - | - | - | S/N..PROB.A |
| 98 | 69 | 70 | 97 | 97 | 98 | - | - | - | - | - | - | - | - | S/N..PROB.B |
| 73 | 26 | 26 | 71 | 71 | 76 | - | - | - | - | - | - | - | - | S/N..PROB.C |
| 29 | 5 | 5 | 27 | 27 | 30 | - | - | - | - | - | - | - | - | S/N..PROB.D |

**GMT 4   MUF 19.3**

| MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | - | MODE |
| 77 | 48 | 48 | 48 | 49 | 51 | 53 | 58 | 66 | 77 | 77 | - | - | - | ANGLE |
| 50 | 99 | 99 | 99 | 99 | 99 | 99 | 95 | 74 | 36 | 8 | - | - | - | C.PROB. |
| 98 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | 98 | 98 | - | - | - | DELAY |
| 170 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | - | - | - | NOISE |
| 254 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | - | - | - | FS.LOSS |
| 8 | 15 | 13 | 12 | 11 | 10 | 9 | 8 | 8 | 8 | 8 | - | - | - | P. LOSS |
| 18 | 10 | 12 | 13 | 14 | 16 | 16 | 18 | 18 | 19 | 20 | - | - | - | S/N..DB |
| 99 | 93 | 96 | 97 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | S/N..PROB.A |
| 89 | 52 | 65 | 71 | 76 | 84 | 84 | 89 | 90 | 90 | 93 | - | - | - | S/N..PROB.B |
| 44 | 17 | 23 | 27 | 31 | 38 | 37 | 43 | 45 | 46 | 51 | - | - | - | S/N..PROB.C |
| 13 | 2 | 4 | 5 | 7 | 10 | 10 | 13 | 13 | 14 | 17 | - | - | - | S/N..PROB.D |

**GMT 6   MUF 29.1**

| MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F+ | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | MODE |
| 71 | 133 | 122 | 117 | 58 | 50 | 47 | 44 | 44 | 46 | 48 | 52 | 60 | 70 | ANGLE |
| 50 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 77 | 39 | C.PROB. |
| 97 | 98 | 97 | 97 | 97 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | DELAY |
| 175 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| 262 | 241 | 243 | 245 | 246 | 247 | 249 | 251 | 253 | 255 | 256 | 258 | 260 | 262 | FS.LOSS |
| 9 | 38 | 34 | 30 | 21 | 19 | 17 | 14 | 12 | 11 | 10 | 9 | 8 | 8 | P. LOSS |
| 19 | -13 | -9 | -5 | 4 | 6 | 9 | 12 | 14 | 17 | 18 | 19 | 19 | 20 | S/N..DB |
| 99 | 7 | 16 | 29 | 76 | 84 | 92 | 96 | 98 | 99 | 99 | 99 | 99 | 99 | S/N..PROB.A |
| 92 | 0 | 2 | 5 | 29 | 36 | 48 | 63 | 76 | 85 | 88 | 91 | 92 | 93 | S/N..PROB.B |
| 48 | 0 | 0 | 0 | 5 | 8 | 14 | 21 | 29 | 37 | 42 | 47 | 48 | 50 | S/N..PROB.C |
| 13 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 8 | 10 | 13 | 13 | 14 | S/N..PROB.D |

**GMT 8   MUF 28.1**

| MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F+ | 2F+ | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | MODE |
| 75 | 169 | 137 | 128 | 123 | 64 | 57 | 50 | 49 | 50 | 53 | 57 | 68 | 73 | ANGLE |
| 50 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 97 | 69 | 17 | C.PROB. |
| 98 | 100 | 98 | 97 | 97 | 97 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | 97 | DELAY |
| 175 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| 261 | 242 | 243 | 245 | 246 | 247 | 249 | 251 | 253 | 255 | 256 | 258 | 260 | 262 | FS.LOSS |
| 10 | 65 | 41 | 36 | 33 | 24 | 21 | 17 | 15 | 13 | 12 | 11 | 10 | 9 | P. LOSS |
| 18 | -40 | -15 | -11 | -7 | 2 | 4 | 9 | 12 | 15 | 16 | 17 | 18 | 19 | S/N..DB |
| 99 | 0 | 5 | 11 | 22 | 66 | 75 | 91 | 97 | 98 | 99 | 99 | 99 | 99 | S/N..PROB.A |
| 88 | 0 | 0 | 1 | 3 | 22 | 29 | 47 | 66 | 77 | 82 | 85 | 90 | 90 | S/N..PROB.B |
| 42 | 0 | 0 | 0 | 0 | 3 | 5 | 13 | 22 | 30 | 34 | 38 | 44 | 45 | S/N..PROB.C |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 7 | 9 | 11 | 12 | S/N..PROB.D |

## OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 26.4 | | | | | | | | | | | | | | |
| | 1F+ | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | MODE |
| | 76 | 135 | 126 | 122 | 60 | 53 | 50 | 49 | 50 | 52 | 56 | 62 | 75 | - | ANGLE |
| | 5 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 98 | 88 | 37 | - | C.PROB. |
| | 98 | 98 | 97 | 97 | 97 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 98 | - | DELAY |
| | 174 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 260 | 241 | 243 | 245 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | - | FS.LOSS |
| | 10 | 43 | 38 | 34 | 24 | 21 | 19 | 16 | 14 | 12 | 11 | 10 | 10 | - | P. LOSS |
| | 18 | -17 | -12 | -8 | 1 | 4 | 6 | 11 | 13 | 16 | 17 | 18 | 18 | - | S/N..DB |
| | 99 | 3 | 9 | 19 | 60 | 76 | 84 | 95 | 97 | 99 | 99 | 99 | 99 | - | S/N..PROB.A |
| | 89 | 0 | 0 | 2 | 19 | 29 | 36 | 57 | 71 | 81 | 85 | 88 | 90 | - | S/N..PROB.B |
| | 43 | 0 | 0 | 0 | 2 | 5 | 8 | 18 | 25 | 34 | 38 | 42 | 44 | - | S/N..PROB.C |
| | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 7 | 8 | 10 | 11 | - | S/N..PROB.D |
| 12 | 24.9 | | | | | | | | | | | | | | |
| | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | MODE |
| | 76 | 46 | 44 | 43 | 43 | 44 | 44 | 46 | 49 | 53 | 59 | 68 | 75 | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 97 | 88 | 64 | 12 | - | C.PROB. |
| | 98 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | 98 | - | DELAY |
| | 173 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 259 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | - | FS.LOSS |
| | 8 | 22 | 18 | 16 | 14 | 13 | 12 | 10 | 9 | 8 | 8 | 8 | 8 | - | P. LOSS |
| | 19 | 3 | 6 | 9 | 11 | 12 | 14 | 16 | 17 | 19 | 20 | 20 | 20 | - | S/N..DB |
| | 99 | 69 | 83 | 92 | 96 | 97 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | - | S/N..PROB.A |
| | 92 | 26 | 37 | 49 | 60 | 66 | 75 | 82 | 87 | 90 | 93 | 93 | 94 | - | S/N..PROB.B |
| | 49 | 5 | 9 | 16 | 21 | 24 | 30 | 36 | 41 | 46 | 51 | 51 | 54 | - | S/N..PROB.C |
| | 16 | 0 | 1 | 2 | 3 | 4 | 7 | 9 | 11 | 14 | 17 | 17 | 18 | - | S/N..PROB.D |
| 14 | 18.7 | | | | | | | | | | | | | | |
| | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | - | - | MODE |
| | 78 | 45 | 46 | 47 | 49 | 51 | 53 | 60 | 71 | 78 | - | - | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 92 | 65 | 16 | - | - | - | - | C.PROB. |
| | 98 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | 98 | - | - | - | - | DELAY |
| | 170 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | - | - | - | - | NOISE |
| | 254 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | - | - | - | - | FS.LOSS |
| | 7 | 10 | 9 | 8 | 8 | 7 | 7 | 7 | 7 | 7 | - | - | - | - | P. LOSS |
| | 19 | 15 | 16 | 17 | 17 | 18 | 19 | 20 | 19 | 20 | - | - | - | - | S/N..DB |
| | 99 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | S/N..PROB.A |
| | 91 | 78 | 83 | 87 | 87 | 90 | 92 | 93 | 92 | 93 | - | - | - | - | S/N..PROB.B |
| | 47 | 32 | 37 | 41 | 41 | 45 | 49 | 52 | 49 | 50 | - | - | - | - | S/N..PROB.C |
| | 14 | 7 | 9 | 11 | 12 | 14 | 16 | 17 | 16 | 16 | - | - | - | - | S/N..PROB.D |
| 16 | 14.8 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | - | - | - | - | - | MODE |
| | 40 | 61 | 65 | 71 | 82 | 85 | 85 | - | - | - | - | - | - | - | ANGLE |
| | 5 | 99 | 96 | 83 | 56 | 27 | 8 | - | - | - | - | - | - | - | C.PROB. |
| | 93 | 97 | 97 | 97 | 98 | 98 | 98 | - | - | - | - | - | - | - | DELAY |
| | 167 | 161 | 162 | 163 | 164 | 165 | 166 | - | - | - | - | - | - | - | NOISE |
| | 249 | 241 | 243 | 245 | 246 | 248 | 249 | - | - | - | - | - | - | - | FS.LOSS |
| | 1 | 11 | 10 | 9 | 9 | 9 | 9 | - | - | - | - | - | - | - | P. LOSS |
| | 25 | 14 | 15 | 15 | 15 | 16 | 17 | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 98 | 98 | 99 | 99 | 99 | 99 | - | - | - | - | - | - | - | S/N..PROB.A |
| | 98 | 74 | 79 | 80 | 80 | 84 | 87 | - | - | - | - | - | - | - | S/N..PROB.B |
| | 78 | 29 | 33 | 34 | 34 | 38 | 41 | - | - | - | - | - | - | - | S/N..PROB.C |
| | 32 | 6 | 8 | 8 | 8 | 10 | 11 | - | - | - | - | - | - | - | S/N..PROB.D |

OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|-----|------|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|---|
| 16 | 10.9 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F- | 1F- | 1F- | - | - | - | - | - | - | - | - | - | MODE |
| | 53 | 95 | 43 | 53 | 53 | - | - | - | - | - | - | - | - | - | ANGLE |
| | 50 | 53 | 79 | 46 | 17 | - | - | - | - | - | - | - | - | - | C.PROB. |
| | 94 | 99 | 94 | 94 | 94 | - | - | - | - | - | - | - | - | - | DELAY |
| | 163 | 161 | 162 | 163 | 164 | - | - | - | - | - | - | - | - | - | NOISE |
| | 244 | 241 | 242 | 244 | 246 | - | - | - | - | - | - | - | - | - | FS.LOSS |
| | 2 | 12 | 3 | 2 | 2 | - | - | - | - | - | - | - | - | - | P. LOSS |
| | 23 | 12 | 22 | 23 | 23 | - | - | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 96 | 99 | 99 | 99 | - | - | - | - | - | - | - | - | - | S/N..PROB.A |
| | 97 | 63 | 96 | 97 | 97 | - | - | - | - | - | - | - | - | - | S/N..PROB.B |
| | 70 | 25 | 65 | 71 | 71 | - | - | - | - | - | - | - | - | - | S/N..PROB.C |
| | 29 | 6 | 25 | 29 | 29 | - | - | - | - | - | - | - | - | - | S/N..PROB.D |
| 20 | 10.9 | | | | | | | | | | | | | | |
| | 1F- | 1F- | 1F- | 1F- | 1F- | - | - | - | - | - | - | - | - | - | MODE |
| | 63 | 44 | 51 | 62 | 62 | - | - | - | - | - | - | - | - | - | ANGLE |
| | 50 | 94 | 77 | 46 | 19 | - | - | - | - | - | - | - | - | - | C.PROB. |
| | 95 | 94 | 94 | 95 | 95 | - | - | - | - | - | - | - | - | - | DELAY |
| | 163 | 161 | 162 | 163 | 164 | - | - | - | - | - | - | - | - | - | NOISE |
| | 244 | 240 | 242 | 244 | 246 | - | - | - | - | - | - | - | - | - | FS.LOSS |
| | 2 | 3 | 3 | 2 | 2 | - | - | - | - | - | - | - | - | - | P. LOSS |
| | 23 | 22 | 22 | 23 | 23 | - | - | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | - | - | - | - | S/N..PROB.A |
| | 97 | 96 | 96 | 97 | 97 | - | - | - | - | - | - | - | - | - | S/N..PROB.B |
| | 70 | 63 | 65 | 71 | 71 | - | - | - | - | - | - | - | - | - | S/N..PROB.C |
| | 28 | 25 | 25 | 29 | 29 | - | - | - | - | - | - | - | - | - | S/N..PROB.D |
| 22 | 12.3 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F- | 1F- | 1F- | 1F- | 1F- | - | - | - | - | - | - | - | MODE |
| | 63 | 87 | 43 | 49 | 59 | 62 | 62 | - | - | - | - | - | - | - | ANGLE |
| | 50 | 88 | 95 | 83 | 58 | 30 | 11 | - | - | - | - | - | - | - | C.PROB. |
| | 95 | 98 | 94 | 94 | 94 | 95 | 95 | - | - | - | - | - | - | - | DELAY |
| | 165 | 161 | 162 | 163 | 164 | 165 | 166 | - | - | - | - | - | - | - | NOISE |
| | 246 | 241 | 242 | 244 | 246 | 247 | 248 | - | - | - | - | - | - | - | FS.LOSS |
| | 2 | 12 | 3 | 2 | 2 | 2 | 1 | - | - | - | - | - | - | - | P. LOSS |
| | 24 | 12 | 22 | 23 | 23 | 24 | 25 | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 96 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | - | - | S/N..PROB.A |
| | 98 | 63 | 96 | 97 | 97 | 98 | 98 | - | - | - | - | - | - | - | S/N..PROB.B |
| | 72 | 25 | 65 | 71 | 71 | 76 | 80 | - | - | - | - | - | - | - | S/N..PROB.C |
| | 30 | 6 | 25 | 29 | 29 | 32 | 35 | - | - | - | - | - | - | - | S/N..PROB.D |
| 24 | 12.7 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F- | 1F- | 1F- | 1F- | - | - | - | - | - | - | - | MODE |
| | 58 | 81 | 90 | 42 | 49 | 58 | 58 | - | - | - | - | - | - | - | ANGLE |
| | 50 | 86 | 67 | 82 | 65 | 42 | 18 | - | - | - | - | - | - | - | C.PROB. |
| | 94 | 98 | 99 | 93 | 94 | 94 | 94 | - | - | - | - | - | - | - | DELAY |
| | 165 | 161 | 162 | 163 | 164 | 165 | 166 | - | - | - | - | - | - | - | NOISE |
| | 247 | 241 | 243 | 244 | 246 | 247 | 248 | - | - | - | - | - | - | - | FS.LOSS |
| | 2 | 11 | 11 | 2 | 2 | 2 | 1 | - | - | - | - | - | - | - | P. LOSS |
| | 24 | 13 | 13 | 23 | 23 | 24 | 25 | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 97 | 97 | 99 | 99 | 99 | 99 | - | - | - | - | - | - | - | S/N..PROB.A |
| | 98 | 69 | 70 | 97 | 97 | 98 | 98 | - | - | - | - | - | - | - | S/N..PROB.B |
| | 75 | 26 | 26 | 71 | 71 | 76 | 80 | - | - | - | - | - | - | - | S/N..PROB.C |
| | 3 | 5 | 5 | 27 | 27 | 30 | 34 | - | - | - | - | - | - | - | S/N..PROB.D |

```
        3          DEC           SSN=   110              26.015
TRANSMITTER            RECEIVER              AZIMUTHS        N.MILES
 SITE C                RCVR 100              61.0 262.8      1493.7
```

## TOTAL RELIABILITY(T.REL.)

REQ. S/N= 0DB(A), 10DB(B), 20DB(C), 30DB(D)

| GMT | A | B | C | D | GMT | A | B | C | D | GMT | A | B | C | D |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 2 | 86 | 81 | 59 | 22 | 10 | 99 | 98 | 62 | 16 | 18 | 82 | 81 | 57 | 24 |
| 4 | 99 | 99 | 69 | 25 | 12 | 99 | 99 | 77 | 27 | 20 | 97 | 96 | 74 | 34 |
| 6 | 99 | 99 | 73 | 24 | 14 | 99 | 99 | 80 | 34 | 22 | 98 | 97 | 78 | 37 |
| 8 | 99 | 98 | 60 | 15 | 16 | 99 | 88 | 45 | 16 | 24 | 97 | 96 | 79 | 36 |

```
        4           DEC          SSN=   110            26.015
    TRANSMITTER       RECEIVER        AZIMUTHS        N.MILES
      SITE C          RCVR 150        61.0 262.8       1493.7
   SIGMA= 1000 SQ. METERS                            ANT= 25DB
   OFF AZIMUTH   0 DEG.    MIN. ANGLE= 4 DEG.   OFF AZIMUTH   0 DEG.
   PWR=200.00KW   3 MC/S MAN.NOISE= -148 DBW   REQ.S/N=  0, 10, 20, 30DB
                        OPERATING FREQUENCIES
```

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 12.1 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | - | - | - | - | - | - | - | - | - | - | - | MODE |
| | 40 | 101 | 107 | - | - | - | - | - | - | - | - | - | - | - | ANGLE |
| | 50 | 56 | 22 | - | - | - | - | - | - | - | - | - | - | - | C.PROB. |
| | 93 | 99 | 100 | - | - | - | - | - | - | - | - | - | - | - | DELAY |
| | 164 | 161 | 162 | - | - | - | - | - | - | - | - | - | - | - | NOISE |
| | 246 | 241 | 243 | - | - | - | - | - | - | - | - | - | - | - | FS.LOSS |
| | 2 | 12 | 12 | - | - | - | - | - | - | - | - | - | - | - | P. LOSS |
| | 23 | 12 | 12 | - | - | - | - | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 96 | 96 | - | - | - | - | - | - | - | - | - | - | - | S/N..PROB.A |
| | 98 | 63 | 65 | - | - | - | - | - | - | - | - | - | - | - | S/N..PROB.B |
| | 72 | 23 | 23 | - | - | - | - | - | - | - | - | - | - | - | S/N..PROB.C |
| | 28 | 4 | 4 | - | - | - | - | - | - | - | - | - | - | - | S/N..PROB.D |
| 4 | 18.5 | | | | | | | | | | | | | | |
| | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | - | - | MODE |
| | 88 | 58 | 58 | 59 | 60 | 62 | 64 | 70 | 82 | 87 | - | - | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 91 | 60 | 21 | - | - | - | - | C.PROB. |
| | 98 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 98 | 98 | - | - | - | - | DELAY |
| | 170 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | - | - | - | - | NOISE |
| | 254 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | - | - | - | - | FS.LOSS |
| | 9 | 15 | 13 | 12 | 11 | 10 | 10 | 9 | 9 | 9 | - | - | - | - | P. LOSS |
| | 18 | 9 | 11 | 13 | 14 | 15 | 16 | 17 | 17 | 18 | - | - | - | - | S/N..DB |
| | 99 | 91 | 95 | 97 | 98 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | S/N..PROB.A |
| | 88 | 47 | 59 | 71 | 76 | 80 | 84 | 86 | 87 | 88 | - | - | - | - | S/N..PROB.B |
| | 42 | 15 | 20 | 27 | 31 | 34 | 37 | 39 | 41 | 42 | - | - | - | - | S/N..PROB.C |
| | 12 | 2 | 3 | 5 | 7 | 8 | 10 | 11 | 11 | 12 | - | - | - | - | S/N..PROB.D |
| 6 | 27.8 | | | | | | | | | | | | | | |
| | 1F+ | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | MODE |
| | 81 | 130 | 116 | 109 | 64 | 59 | 56 | 54 | 55 | 57 | 60 | 64 | 76 | 81 | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 98 | 91 | 62 | 22 | C.PROB. |
| | 98 | 98 | 97 | 96 | 97 | 97 | 96 | 96 | 96 | 96 | 97 | 97 | 98 | 98 | DELAY |
| | 175 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | 175 | NOISE |
| | 261 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | 262 | FS.LOSS |
| | 9 | 38 | 35 | 31 | 21 | 19 | 17 | 14 | 12 | 11 | 10 | 10 | 9 | 9 | P. LOSS |
| | 19 | -13 | -9 | -5 | 4 | 6 | 8 | 12 | 14 | 16 | 17 | 18 | 18 | 20 | S/N..DB |
| | 99 | 7 | 16 | 29 | 76 | 84 | 90 | 96 | 98 | 99 | 99 | 99 | 99 | 99 | S/N..PROB.A |
| | 91 | 0 | 2 | 5 | 29 | 36 | 44 | 63 | 76 | 81 | 85 | 88 | 90 | 93 | S/N..PROB.B |
| | 46 | 0 | 0 | 0 | 5 | 8 | 11 | 21 | 29 | 34 | 38 | 42 | 44 | 50 | S/N..PROB.C |
| | 12 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 7 | 8 | 10 | 11 | 14 | S/N..PROB.D |
| 8 | 26.9 | | | | | | | | | | | | | | |
| | 1F+ | 2F+ | 2F- | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | MODE |
| | 86 | 176 | 132 | 121 | 115 | 70 | 64 | 60 | 60 | 62 | 65 | 70 | 85 | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 92 | 48 | - | C.PROB. |
| | 98 | 11 | 98 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 98 | - | DELAY |
| | 174 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 26 | 242 | 243 | 245 | 246 | 248 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | - | FS.LOSS |
| | 11 | 64 | 41 | 37 | 33 | 23 | 21 | 18 | 15 | 13 | 12 | 11 | 11 | - | P. LOSS |
| | 17 | -39 | -16 | -11 | -7 | 2 | 4 | 9 | 11 | 14 | 15 | 16 | 17 | - | S/N..DB |
| | 99 | 0 | 4 | 11 | 22 | 66 | 75 | 91 | 95 | 98 | 98 | 99 | 99 | - | S/N..PROB.A |
| | 87 | 0 | 0 | 1 | 3 | 22 | 29 | 47 | 60 | 72 | 78 | 82 | 87 | - | S/N..PROB.B |
| | 40 | 0 | 0 | 0 | 0 | 3 | 5 | 13 | 19 | 26 | 30 | 34 | 40 | - | S/N..PROB.C |
| | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 6 | 7 | 9 | - | S/N..PROB.D |

OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 25.3 | | | | | | | | | | | | | | |
| | 1F+ | 2F- | 2F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | MODE |
| | 87 | 130 | 119 | 74 | 66 | 62 | 59 | 59 | 61 | 64 | 69 | 78 | 86 | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 95 | 74 | 17 | - | C.PROB. |
| | 98 | 98 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 98 | 98 | - | DELAY |
| | 173 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | 174 | - | NOISE |
| | 259 | 241 | 243 | 245 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 258 | 260 | - | FS.LOSS |
| | 11 | 43 | 38 | 27 | 24 | 21 | 19 | 16 | 14 | 12 | 11 | 11 | 10 | - | P. LOSS |
| | 16 | -18 | -13 | -1 | 1 | 4 | 6 | 10 | 12 | 15 | 16 | 17 | 17 | - | S/N..DB |
| | 99 | 2 | 8 | 45 | 60 | 76 | 84 | 93 | 97 | 98 | 99 | 99 | 99 | - | S/N..PROB.A |
| | 84 | 0 | 0 | 11 | 19 | 29 | 36 | 52 | 66 | 77 | 82 | 85 | 87 | - | S/N..PROB.B |
| | 37 | 0 | 0 | 1 | 2 | 5 | 8 | 15 | 22 | 30 | 34 | 38 | 40 | - | S/N..PROB.C |
| | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 7 | 9 | 9 | - | S/N..PROB.D |
| 12 | 23.9 | | | | | | | | | | | | | | |
| | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | MODE |
| | 87 | 56 | 54 | 53 | 53 | 54 | 55 | 57 | 61 | 66 | 73 | 86 | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 95 | 78 | 47 | - | - | C.PROB. |
| | 98 | 96 | 96 | 96 | 96 | 96 | 96 | 97 | 97 | 97 | 97 | 98 | - | - | DELAY |
| | 173 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | 171 | 172 | 173 | - | - | NOISE |
| | 258 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | 255 | 257 | 258 | - | - | FS.LOSS |
| | 9 | 22 | 19 | 16 | 15 | 13 | 12 | 11 | 10 | 9 | 9 | 9 | - | - | P. LOSS |
| | 18 | 3 | 6 | 8 | 10 | 12 | 13 | 16 | 17 | 18 | 19 | 18 | - | - | S/N..DB |
| | 99 | 69 | 83 | 90 | 94 | 97 | 97 | 99 | 99 | 99 | 99 | 99 | - | - | S/N..PROB.A |
| | 88 | 26 | 37 | 45 | 55 | 66 | 70 | 82 | 87 | 88 | 91 | 88 | - | - | S/N..PROB.B |
| | 43 | 5 | 9 | 13 | 18 | 24 | 27 | 36 | 41 | 42 | 47 | 43 | - | - | S/N..PROB.C |
| | 12 | 0 | 1 | 2 | 3 | 4 | 5 | 9 | 11 | 12 | 14 | 12 | - | - | S/N..PROB.D |
| 14 | 17.9 | | | | | | | | | | | | | | |
| | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | - | - | - | MODE |
| | 89 | 55 | 56 | 58 | 60 | 62 | 65 | 73 | 89 | - | - | - | - | - | ANGLE |
| | 50 | 99 | 99 | 99 | 99 | 99 | 98 | 85 | 47 | - | - | - | - | - | C.PROB. |
| | 98 | 96 | 96 | 97 | 97 | 97 | 97 | 97 | 98 | - | - | - | - | - | DELAY |
| | 169 | 161 | 162 | 163 | 164 | 165 | 166 | 168 | 169 | - | - | - | - | - | NOISE |
| | 253 | 241 | 243 | 244 | 246 | 247 | 249 | 251 | 253 | - | - | - | - | - | FS.LOSS |
| | 8 | 10 | 9 | 9 | 8 | 8 | 8 | 8 | 8 | - | - | - | - | - | P. LOSS |
| | 18 | 14 | 15 | 16 | 17 | 17 | 18 | 19 | 18 | - | - | - | - | - | S/N..DB |
| | 99 | 98 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | - | - | - | - | - | S/N..PROB.A |
| | 90 | 74 | 79 | 84 | 87 | 87 | 90 | 91 | 90 | - | - | - | - | - | S/N..PROB.B |
| | 45 | 29 | 33 | 37 | 41 | 41 | 45 | 47 | 45 | - | - | - | - | - | S/N..PROB.C |
| | 13 | 6 | 8 | 10 | 12 | 12 | 13 | 15 | 13 | - | - | - | - | - | S/N..PROB.D |
| 16 | 11.7 | | | | | | | | | | | | | | |
| | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | 1F+ | - | - | - | - | - | - | - | - | MODE |
| | 96 | 72 | 77 | 85 | 95 | 95 | - | - | - | - | - | - | - | - | ANGLE |
| | 5 | 99 | 92 | 72 | 40 | 15 | - | - | - | - | - | - | - | - | C.PROB. |
| | 99 | 97 | 98 | 98 | 99 | 99 | - | - | - | - | - | - | - | - | DELAY |
| | 164 | 161 | 162 | 163 | 164 | 165 | - | - | - | - | - | - | - | - | NOISE |
| | 246 | 241 | 243 | 245 | 246 | 248 | - | - | - | - | - | - | - | - | FS.LOSS |
| | 10 | 11 | 10 | 10 | 10 | 10 | - | - | - | - | - | - | - | - | P. LOSS |
| | 15 | 13 | 14 | 14 | 15 | 15 | - | - | - | - | - | - | - | - | S/N..DB |
| | 98 | 97 | 98 | 98 | 99 | 99 | - | - | - | - | - | - | - | - | S/N..PROB.A |
| | 79 | 69 | 75 | 76 | 80 | 80 | - | - | - | - | - | - | - | - | S/N..PROB.B |
| | 33 | 26 | 30 | 30 | 34 | 34 | - | - | - | - | - | - | - | - | S/N..PROB.C |
| | 8 | 5 | 6 | 7 | 8 | 8 | - | - | - | - | - | - | - | - | S/N..PROB.D |

OPERATING FREQUENCIES

| GMT | MUF | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | |
|-----|-----|---|----|----|----|----|----|----|----|----|----|----|----|----|---|
| 18 | 11.5 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | - | 1F- | 1F- | - | - | - | - | - | - | - | - | MODE |
| | 42 | 107 | 107 | - | 41 | 41 | - | - | - | - | - | - | - | - | ANGLE |
| | 50 | 39 | 9 | - | 34 | 11 | - | - | - | - | - | - | - | - | C.PROB. |
| | 93 | 100 | 100 | - | 93 | 93 | - | - | - | - | - | - | - | - | DELAY |
| | 164 | 161 | 162 | - | 164 | 165 | - | - | - | - | - | - | - | - | NOISE |
| | 245 | 242 | 243 | - | 245 | 247 | - | - | - | - | - | - | - | - | FS.LOSS |
| | 2 | 12 | 12 | - | 2 | 2 | - | - | - | - | - | - | - | - | P. LOSS |
| | 24 | 12 | 12 | - | 24 | 24 | - | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 96 | 96 | - | 99 | 99 | - | - | - | - | - | - | - | - | S/N..PROB.A |
| | 98 | 63 | 65 | - | 98 | 98 | - | - | - | - | - | - | - | - | S/N..PROB.B |
| | 73 | 25 | 25 | - | 76 | 76 | - | - | - | - | - | - | - | - | S/N..PROB.C |
| | 30 | 6 | 6 | - | 32 | 32 | - | - | - | - | - | - | - | - | S/N..PROB.D |
| 20 | 11.4 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F- | 1F- | 1F- | - | - | - | - | - | - | - | - | MODE |
| | 51 | 115 | 115 | 45 | 50 | 50 | - | - | - | - | - | - | - | - | ANGLE |
| | 50 | 43 | 13 | 64 | 34 | 12 | - | - | - | - | - | - | - | - | C.PROB. |
| | 94 | 100 | 100 | 94 | 94 | 94 | - | - | - | - | - | - | - | - | DELAY |
| | 164 | 161 | 162 | 163 | 164 | 165 | - | - | - | - | - | - | - | - | NOISE |
| | 245 | 242 | 244 | 244 | 246 | 247 | - | - | - | - | - | - | - | - | FS.LOSS |
| | 2 | 13 | 12 | 2 | 2 | 2 | - | - | - | - | - | - | - | - | P. LOSS |
| | 24 | 11 | 12 | 23 | 23 | 24 | - | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 95 | 96 | 99 | 99 | 99 | - | - | - | - | - | - | - | - | S/N..PROB.A |
| | 98 | 58 | 65 | 97 | 97 | 98 | - | - | - | - | - | - | - | - | S/N..PROB.B |
| | 73 | 22 | 25 | 71 | 71 | 76 | - | - | - | - | - | - | - | - | S/N..PROB.C |
| | 30 | 5 | 6 | 29 | 29 | 32 | - | - | - | - | - | - | - | - | S/N..PROB.D |
| 22 | 12.9 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F- | 1F- | 1F- | - | - | - | - | - | - | - | MODE |
| | 51 | 100 | 116 | 116 | 42 | 51 | 51 | - | - | - | - | - | - | - | ANGLE |
| | 50 | 81 | 49 | 19 | 74 | 47 | 23 | - | - | - | - | - | - | - | C.PROB. |
| | 94 | 99 | 100 | 100 | 93 | 94 | 94 | - | - | - | - | - | - | - | DELAY |
| | 165 | 161 | 162 | 163 | 164 | 165 | 166 | - | - | - | - | - | - | - | NOISE |
| | 247 | 241 | 244 | 245 | 245 | 247 | 248 | - | - | - | - | - | - | - | FS.LOSS |
| | 2 | 12 | 12 | 11 | 2 | 2 | 1 | - | - | - | - | - | - | - | P. LOSS |
| | 24 | 12 | 12 | 13 | 23 | 24 | 25 | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 96 | 96 | 97 | 99 | 99 | 99 | - | - | - | - | - | - | - | S/N..PROB.A |
| | 98 | 63 | 65 | 71 | 97 | 98 | 98 | - | - | - | - | - | - | - | S/N..PROB.B |
| | 75 | 25 | 25 | 29 | 71 | 76 | 80 | - | - | - | - | - | - | - | S/N..PROB.C |
| | 32 | 6 | 6 | 7 | 29 | 32 | 35 | - | - | - | - | - | - | - | S/N..PROB.D |
| 24 | 13.4 | | | | | | | | | | | | | | |
| | 1F- | 1F+ | 1F+ | 1F+ | 1F+ | 1F- | 1F- | - | - | - | - | - | - | - | MODE |
| | 46 | 93 | 105 | 112 | 112 | 42 | 46 | - | - | - | - | - | - | - | ANGLE |
| | 50 | 80 | 57 | 26 | 6 | 58 | 34 | - | - | - | - | - | - | - | C.PROB. |
| | 94 | 99 | 100 | 100 | 100 | 93 | 94 | - | - | - | - | - | - | - | DELAY |
| | 166 | 161 | 162 | 163 | 164 | 165 | 166 | - | - | - | - | - | - | - | NOISE |
| | 247 | 241 | 243 | 245 | 247 | 247 | 248 | - | - | - | - | - | - | - | FS.LOSS |
| | 2 | 12 | 11 | 11 | 11 | 2 | 1 | - | - | - | - | - | - | - | P. LOSS |
| | 25 | 12 | 12 | 13 | 14 | 24 | 25 | - | - | - | - | - | - | - | S/N..DB |
| | 99 | 96 | 96 | 97 | 98 | 99 | 99 | - | - | - | - | - | - | - | S/N..PROB.A |
| | 98 | 63 | 65 | 71 | 76 | 98 | 98 | - | - | - | - | - | - | - | S/N..PROB.B |
| | 77 | 23 | 23 | 27 | 31 | 76 | 80 | - | - | - | - | - | - | - | S/N..PROB.C |
| | 32 | 4 | 4 | 5 | 7 | 30 | 34 | - | - | - | - | - | - | - | S/N..PROB.D |

```
        4           DEC           SSN=   110              26.015
TRANSMITTER           RECEIVER              AZIMUTHS       N.MILES
  SITE C              RCVR 150             61.0 262.8      1493.7

                  TOTAL RELIABILITY(T.REL.)

          REQ. S/N= 0DB(A), 10DB(B), 20DB(C), 30DB(D)

GMT   A  B  C  D      GMT   A  B  C  D      GMT   A  B  C  D

  2   54 49 36 14      10   99 94 52 11      18   60 50 37 15

  4   99 99 67 21      12   99 99 73 26      20   82 76 55 24


  6   99 99 65 20      14   99 99 73 27      22   95 90 70 31

  8   99 95 50 12      16   99 79 38  9      24   91 79 55 21
```